Celebrity Endorser Scandals and Competitor Firm Value

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ABSTRACT

Celebrity endorsement is a common advertising strategy, yet, as well-known scandals show, it is not without risk. Studies at the marketing–finance interface investigate how negative publicity surrounding a celebrity endorser affects firm value, though without determining how such events might spill over to the sponsor firms' competitors and their stock prices. To address this research gap, the authors assess the impact of celebrity endorser scandals on competitor stock returns with an event study approach. The unique sample of 121 celebrity scandals over a 35-year period reveals a contagion effect, such that competitor firms experience negative stock returns on average, though not to the same extent. According to univariate and regression analyses, the more negative the event affects the sponsor company and the more homogeneous the industry, the stronger the negative spillover effect from a scandal. These findings show that a contagion effect is a likely scenario and offer recommendations for managers regarding how they should adapt their risk management processes and communicate with their boards and shareholders.

Using celebrity endorsers to promote brands, products, or services has been a popular advertising strategy for decades (Carrillat and Ilicic 2019). For example, in a worldwide database of more than 13,000 TV, digital, print, and outdoor ads, celebrities appear in 16% of the ads (Kantar 2021). Due to its prevalent use and high expenses, research at the marketing–finance interface carefully considers celebrity endorsers (Edeling, Srinivasan, and Hanssens 2021) and provides solid empirical evidence of their positive effects on sponsors' firm value (Agrawal and Kamakura 1995). However, celebrity endorsers also create financial risk, because their adverse behaviors can harm a sponsor's reputation (Till and Shimp 1998). Empirical evidence affirms that a celebrity scandal can transfer to the endorsed brand, resulting in reduced sponsor stock prices (Bartz, Molchanov, and Stork 2013).

Yet research at the marketing–finance interface devotes little attention to the potential firm value effects of celebrity scandals for competitors of the sponsor firm, although such spillover effects have been well documented in other contexts (Edeling, Srinivasan, and Hanssens 2021). In a case study, Knittel and Stango (2014) investigate the stock market impacts of Tiger Woods's adultery scandal and find no generalizable average effect on competitor stock returns but highlight competitor endorsement intensity as a boundary condition of spillover effects, with the underlying theoretical mechanism being celebrity endorsement reputation risk. This study provides some important first insights, yet it remains unclear whether any positive or negative average effect of celebrity scandals on competitor firm value may exist in a broader sample. Moreover, it is not clear whether competitor endorsement intensity as a determinant is generalizable to different scandals and industries and reputation risk the only mechanism explaining the spillover. Other determinants and mechanisms (e.g., signal strength, similarity) might influence the occurrence and magnitude of spillover effects, leaving ample room for further research.

In this study, we address these knowledge gaps and offer three main contributions. First, we examine the spillover of a celebrity endorser scandal on the sponsor firms' direct competitors and their firm value, using a broad sample of real-life scandals in different

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industries. Existing research at the marketing–finance interface has investigated other sources of spillover effects on competitors, such as foreign market entry (Gielens et al. 2008), product innovations (Sood and Tellis 2009), customer data breaches (Kashmiri, Nicol, and Hsu 2017), and social media chatter (Borah and Tellis 2016). Spillover studies in an advertising context focus on sales effects of direct mail as well as online and television ads, instead of firm value effects of celebrity endorser scandals (Anderson and Simester 2013; Sahni 2016; Shapiro 2018). Knittel and Stango's (2014) analysis of celebrity endorser scandal spillover effects relies on a case study of a single event, so they explicitly call for a broader investigation, noting "it would be unwise to extrapolate our findings to the larger population of celebrity endorsers or to other types of scandal" (p. 22). We gather a sample of various types of scandals, involving many celebrities and companies from different industries over a 35-year period, so that we can establish generalizable insights about celebrity endorser scandals and their effects on competitor firm value, advancing marketing–finance theory and advertising research (Edeling, Srinivasan, and Hanssens 2021). Knowledge of possible effects is also important for managers, as it shows them what is on average the most likely scenario to which they should align their expectations and possible actions (e.g., adjust risk management systems).

Second, we apply regression analysis to reveal which variables explain competitor stock returns following a celebrity endorser scandal. We focus on factors related to stock market reaction (i.e., scandals effect on sponsor stock returns as first-order spillover) and industry (i.e., homogeneity), which are of great relevance in spillover contexts. These two factors represent two mechanisms of accessibility-diagnosticity theory (i.e., signal strength, similarity) that provide alternative explanations for a spillover effect that differ from the extant literature. Whereas Knittel and Stango (2014) assume that investors analyze each rival firm to the extent it is also exposed to a celebrity endorser reputation risk, we assume that investors build on more general judgments driven by accessibility and diagnosticity (i.e., guilt by association; see Roehm and Tybout 2006). This might be particularly relevant in industries where celebrity endorsement intensity is not as high as in the sporting goods industry Knittel and Stango (2014) studied. Building on accessibility-diagnosticity theory, we assume that both the first-order spillover (reflecting signal strength) and industry homogeneity (reflecting similarity among firms) increase accessibility and diagnosticity, enhancing spillover effects on rival firms. Such insights can inform various stakeholders who seek to understand which conditions encourage spillover effects after a celebrity endorser scandal. For example, marketing managers need to know if, when, and how a competitor's endorser scandal creates market opportunities or requires protective measures (e.g., enhance advertising activities).

Third, by examining first-order spillovers (scandal's effect on sponsor) as a baseline for our investigation of second-order spillovers (scandal's effect on a sponsor's competitors), our results complement insights from prior research on first-order spillovers. Replications of existing studies can ensure the cross-validation of existing research. Examining different times and samples also enhances the reliability and validity of the original research (Lynch et al. 2015), which thus constitutes another contribution of this study.

Theoretical Background and Hypotheses

Celebrity Endorsements and Scandals

This study reflects two fields of research at the marketing–finance interface: firm value effects of celebrity endorsers, as a part of a firm's advertising strategy, and the spillover effects among firms after various events.

Existing studies on the effects of celebrity endorsements on firm value consider abnormal returns as the dependent variable, that is, the difference between actual stock returns with an event and expected stock returns without event on a given day or cumulatively over several days, and they focus on three types of events: announcements of new endorsement contracts, celebrity performance while under contract, and negative celebrity publicity (for a review, see Bergkvist and Zhou 2016). The former two events typically initiate positive abnormal returns for the sponsor companies. For example, Agrawal and Kamakura (1995) examine 110 events and report statistically significant positive abnormal returns on the announcement date. Similarly, Elberse and Verleun (2012) find for 596 events that celebrity performance (i.e., athletic achievements) is associated with positive cumulative abnormal returns on the event and subsequent day. In contrast, negative celebrity endorser publicity damages the firm (Louie, Kulik, and Jacobson 2001); Bartz, Molchanov, and Stork (2013) examine 93 celebrity scandals over a 25-year period and find negative abnormal returns for the sponsor companies for several days following the event.

Spillover Effects

Research in marketing and management has explored second-order spillover effects on competitor firm value in response to various events (Fosfuri and Giarratana 2009; Gielens et al. 2008; Takeda 2022). The events that best parallel celebrity endorser scandals involve some form of corporate crisis, though research into spillovers from such crises tends to be unrelated to marketing and advertising but instead is centered more on industrial accidents (Diestre and Rajagopalan 2014), product safety or health incidents (Ahmed, Gardella, and Nanda 2002), or financial reporting fraud (Kang 2008). Extant marketing research indicates that negative social media chatter about a brand during a product recall also increases negative chatter about competitor brands and lowers their stock returns (Borah and Tellis 2016). Similarly, a customer data breach announcement by a firm decreases the value of rival firms (Kashmiri, Nicol, and Hsu 2017). As we noted, Knittel and Stango (2014) study spillover effects on the competitor's firm value after a celebrity endorser scandal and find no effect for their total sample. Because their result is based on a single case study, the question remains whether, as with other marketing crises, there is a generalizable negative average effect on competitors when a broader sample of celebrity endorser scandals is used.

Conceptualization and Hypotheses

Investors usually regard celebrity endorsements as an advertising strategy that creates value for sponsors, whereas celebrity endorser scandals have adverse impacts. Spillover literature indicates two opposing effects for competitors of a firm affected by a celebrity endorser scandal: competition (i.e., positive) or contagion (i.e., negative; Lang and Stulz 1992). Building on accessibility-diagnosticity theory, we argue for a contagion effect of a celebrity endorser scandal on the sponsor's competitors abnormal returns (hypothesis 1) and focus on two variables related to the stock market reaction and industry that help explain the spillover effect: the sponsor's negative abnormal returns as signal strength (hypothesis 2) and industry homogeneity as similarity (hypothesis 3).

Accessibility-diagnosticity theory considers the effects of different factors on the likelihood that a person's judgment of one object will be used as a basis for the judgment of other objects: the perceived diagnosticity of a first judgment for other judgments, the accessibility of the first judgment, and the accessibility of alternative inputs for other judgments (Feldman and Lynch 1988). The perceived diagnosticity of the first judgment for other judgments is the degree to which the person perceives that the judgment of the first object correctly identifies how the other object should be judged. The judgment of the first object is more diagnostic if a person assesses the other object as similar. Because of negativity bias, a negative first judgment may be considered more diagnostic of other judgments than a positive judgment (Herr, Kardes, and Kim 1991).

The accessibility of the first judgment is a function of the similarity of the different objects and the signal strength of the first judgment (Fazio et al. 1982). The more similar the objects and the stronger the first judgment as a signal, the better the accessibility of the first judgment. The accessibility of alternative inputs to the other judgments depends on the accessibility of the first judgment and a person's ability and willingness to retrieve alternative inputs. The increased accessibility of the first judgment reduces the likelihood that other inputs are retrieved because of output interference effects (e.g., Alba and Chattopadhyay 1986).

Following accessibility-diagnosticity theory (Feldman and Lynch 1988), we propose that second-order spillover effects on sponsor competitors due to celebrity endorser scandals are more likely to occur when companies are perceived as similar, such as direct competitors (e.g., they compete in the same product category from a customer perspective). If a scandal affects a sponsor, investors' knowledge about other firms connected to the sponsor such as competitors becomes accessible and may be diagnostic. The direction of a potential spillover effect (i.e., competition or contagion) depends on whether investors perceive the event as being idiosyncratic or systematic (Kashmiri, Nicol, and Hsu 2017). If an event is idiosyncratic to a firm (e.g., public reports about quality problems in a firm's production), a competitive effect may occur with competitors profiting because of an expected customer demand shift away from the affected firm. If the event is not perceived as idiosyncratic but systematic (e.g., investors believe that all firms in an industry share a certain risk), a contagion effect may occur with competitors also being punished by investors.

We expect that investors perceive celebrity endorser scandals not as idiosyncratic but rather systematic for an entire industry. Celebrity endorser scandals and similar scandals where firms are connected to third-party entities (e.g., cobranding, sponsoring events, suppliers) are not under full control of the sponsor firm and do not occur because of any wrongdoing of the firm (Carrillat and Ilicic 2019). They thus are a systematic risk that can occur to any company in an industry. In this setting, a contagion effect becomes likely because the negative sponsor effect is diagnostic for what might happen to competitors (Roehm and Tybout 2006). Industrywide contagion effects have been observed in various circumstances (e.g., Lang and Stulz 1992), including celebrity endorser scandals (Knittel and Stango 2014), supported by alternative theoretical accounts which all share the notion of similarity ultimately predicting the outcome.

To verify this reasoning and to understand spillover mechanisms, we conducted five interviews with senior-level equity analysts and investors from banking, private equity, and asset management companies, asking them to explain the market mechanisms that might cause a spillover effect from a celebrity endorser scandal. We analyzed these expert interviews using qualitative content analysis. The results confirm that investors consider celebrity endorser scandals as systematic for whole industries (e.g., "Industry competitors of a scandal-affected firm become guilty by association and are collectively punished"; equity analyst, male, age 50–60). The results also show that for minor events, such as celebrity endorser scandals, investors rarely conduct a thorough investigation of the scandal or how the event might influence individual competitors (e.g., "Analysts and traders do not regard the details of minor events such as celebrity endorser scandals"; fund manager, male, age 50–60). Instead, they rely on readily available information. Specifically, investors evaluate competitors' firm value relative to the affected sponsor, with the logic that the sponsor's stock returns are sufficiently informative to draw conclusions about the firm value implications for related companies (e.g., "Negative headlines that cause a devaluation of the directly affected company […] might influence, due to a sectoral link […] and comparative market valuation, the valuation of other companies in the sector […]. We call this correlation on bad news"; equity trader, male, age 40–50). The experts also stated that investors would use their general knowledge about the characteristics of the affected industry (e.g., "Companies in the same industry often share success factors, and 70 percent to 80 percent of news concern the whole industry, not only a single company. It is therefore critical to look at the industry in its entirety"; fund manager, male, age 50–60).

To summarize, we predict that spillovers from the affected sponsor to a competitor will occur when the two firms are perceived as similar, such as direct competitors. Because of their similarity, certain risks of one company can be considered diagnostic for their competitors. In addition, investors will hold stronger ties in memory if companies are similar, making the information of one company also more accessible when the other company is activated in memory. Consequently, we anticipate that, on average, a celebrity endorser scandal negatively affects competitors.

H1: A celebrity endorser scandal has a negative impact on abnormal returns for competitors of the sponsor firm.

We investigate the underlying accessibility-diagnosticity mechanism in more detail by focusing on two variables that both increase the negative effect of a celebrity endorser scandal for competitors of the sponsor firm: (a) negative abnormal returns of the sponsor and (b) industry homogeneity. The negative abnormal returns of the sponsor represent the strength of the negative signal that is activating knowledge about competitors (Gaur, Malhotra, and Zhu 2013). We posit that the stronger this signal is, the more easily this knowledge is accessed and the more diagnostic it will appear (Feldman and Lynch 1988). Moreover, negative information in general is perceived as more diagnostic than positive information (Herr, Kardes, and Kim 1991). Industry homogeneity also drives both accessibility and diagnosticity (Goldman, Peyer, and Stefanescu 2012). The more homogenous firms are within an industry (i.e., companies use similar production technologies or compete in similar product markets), the more similar competitors are. In turn, the more similar competitors are, the more accessible is the connection between them, and the more likely they are to share certain systematic risks related to third-party scandals, that is, the information is more diagnostic. This results in the following two hypotheses.

H2: The stronger the signal of negative abnormal returns of the affected sponsor, the more negative the impact of celebrity endorser scandals on competitor abnormal returns.

H3: The greater the similarity regarding industry homogeneity, the more negative the impact of celebrity endorser scandals on competitor abnormal returns.

Based in part on our expert interviews, we do not expect that investors usually use inputs other than those discussed here to make judgments about spillover effects. First, the high accessibility of the first judgment reduces the likelihood that other inputs are retrieved and used (Alba and Chattopadhyay 1986).

Second, although investors, as experts, are certainly able to retrieve alternative inputs for an assessment of competitor stocks, we assume that they will not do so, because they view the event as systematic for an entire industry, so that an analysis of individual companies is not necessary (Carrillat and Ilicic 2019). Consequently, for example, network connections (e.g., a chief executive officer has work connections to other companies), which play a role in other spillover contexts, should not play a role for spillover effects in a celebrity endorser scandal context, because management cannot control and is not responsible for scandals associated with third parties (Kang 2008). Moreover, the average celebrity endorser scandal is a minor stock market event, attracting much less attention than blockbuster events such as bankruptcy filings and major merger and acquisition announcements (Eckbo 1983). We therefore predict that, due to the sheer amount of information that affects stock prices, investors are unlikely to assess thoroughly the performance implications of each minor event on competitors. The relevant determinants of spillover for such minor events therefore must be either easily observable or part of a broad audience's general knowledge about the firm or industry such as the ones discussed (e.g., Barnett and King 2008).

Method

Sample and Data Collection

To analyze the effect of celebrity endorser scandals on the value of sponsor firms and their competitors, we first compiled a sample of relevant celebrity endorser scandals involving at least one publicly listed sponsor. We hand-collected our sample of celebrity endorser scandals with an extensive keyword search on Google, LexisNexis, and Factiva media databases. Search terms included various combinations of keywords (e.g., *celebrity endorser*, *scandal*, *misbehavior*, *negative publicity*). We used LexisNexis to identify the relevant event date and to verify the endorsement relationship at the time of the scandal. We excluded events for which we could not ascertain this information.

For those valid events, we then identified direct competitors of each sponsor firm. Identifying direct competitors is a primary concern for our study, as we expect spillover effects will be only observable for closely related firms (Carrillat, d'Astous, and Christianis 2014). As including competitors lacking a direct relation would reduce the power of the tests (Hadlock and Sonti 2012), we took two approaches to alleviate this concern. First, we turned to company reports listing relevant competitors compiled by industry experts. These expert assessments ensure that companies compete in the same product category from a customer perspective. The three general data providers we consider offer industrywide usage: Hoover's, with broad coverage and acceptance; and GlobalData and MarketLine, which offer expertise in the consumer goods market, to which most of our sponsor companies belong. Second, to incorporate the view of investment professionals, we also considered the data providers S&P Global Market Intelligence and Avention, which are both commonly applied by financial analysts. For inclusion in our sample, four of these five data providers must list a company as a competitor of a specific sponsor. If the analysis in this selection step does not result in a group of at least three relevant competitors per sponsor firm and event, we relaxed our selection criteria by one.

We limited the scope of sponsor and competitor companies to U.S.-based firms, listed on U.S. exchanges, or non-U.S. companies that either have a secondary listing on a U.S. exchange or have American depositary receipt (ADR) prices available (i.e., certificates issued by a U.S. bank that represent shares in foreign stock). We obtained information on firm and market stock returns from S&P Global Market Intelligence. We excluded sponsor and competitor companies that experienced a confounding event during the event window to ensure that the abnormal returns were solely caused by the celebrity endorser scandal and no other events (Diestre and Rajagopalan 2014). We used the S&P Global Market Intelligence Key Developments database and a LexisNexis keyword search to screen for potential confounding events. The compiled list of keywords (e.g., *unexpected dividend changes*, *relevant merger and acquisition activities*, *earnings announcements*) came from event studies that use a similar approach (e.g., Homburg, Vollmayr, and Hahn 2014). Finally, we eliminated all companies with insufficient stock price data and, on the event level, competitors that also function as a sponsor company (cf. Knittel and Stango 2014).

The final usable sample for the spillover analysis thus consists of 121 events, spread over a 35-year period from 1981 to the middle of 2015. The events involved 107 endorsers, 90 unique sponsors, and 207 competitor firms. Some celebrities endorsed more than one firm, and some sponsor and competitor companies were affected by several events. In total, we obtained 594 observations in our competitor sample and 189 observations in our sponsor sample. The

Table 1. Selection of sample for spillover analysis.

Selection Stages	Events	Sponsors	Competitors
Valid events with full information[a]	226	405	2,608
Insufficient stock price data sponsors	184	312	2,093
Confounding event sponsors	123	193	1,273
Insufficient stock price data competitors	123	193	946
Confounding event competitors	121	189	635
Final sample for spillover analysis	121	189	594

[a]Event meets scandal definition, event date clearly identifiable, sponsor relationship verifiable, and securities listing in the United States of America.

selection stages for our sample are summarized in Table 1. Supplemental Online Appendix W1 provides detailed information on each event.

Event Study and Empirical Model

To test hypothesis 1, we conduct an event study according to proposed procedures (Brown and Warner 1985; McWilliams and Siegel 1997). Event studies are a well-established methodology to measure how an event, in our case a celebrity endorser scandal, affects the market value of a company's stock. Appendix A describes how we capture the effect of each celebrity endorser scandal on sponsor and competitor daily abnormal returns (ARs) and cumulative abnormal returns (CARs). With these measures, we can determine the direction and extent to which a stock's value deviates from its expected value on a given day or cumulatively over several days within a particular time window surrounding the event date. Average effects across sponsor or competitor firms are assessed by calculating average abnormal returns (AARs) for individual days and cumulative average abnormal returns (CAARs) for the whole event window.

To test hypotheses 2 and 3, we regress the CARs of an individual competitor i against independent variables and control variables in a robustness check (McWilliams and Siegel 1997). We choose competitor eight-day CAR_i $[-2; 5]$ as our event window, that is, it begins two days $[-2]$ prior to the event date $t = 0$, where the media make the scandal public, and ends five days [5] after it (see Appendix A for why we choose this event window). In our sample, most scandals involve more than one firm, and several firms are affected by more than one scandal. As we want to generalize findings for competitors, we perform our analyses at the competitor level. Our data must be considered clustered as there might be related subsamples (e.g., the error terms for competitors might be correlated because they are affected by the same event). Thus, classical error terms which are assumed to be independent are inappropriate for our analyses. To control for these potential dependencies and to guarantee robust statistical inference, respectively, we apply cluster-robust standard error estimators (Gande and Lewis 2009).

Variable Operationalization

Dependent and Independent Variables

The dependent variable, the competitor's CAR_i $[-2; 5]$, is calculated by the market model (see Appendix A). We obtained information about our independent and control variables from S&P Global Market Intelligence, Compustat, LexisNexis, and Google (see Appendix B for a description of all measures and data sources). We operationalize signal strength with negative abnormal returns sponsor, which represents the sponsor firm's CAR where returns are reversed to reflect negative returns, measured over the same eight-day event window as the dependent variable (e.g., Gaur, Malhotra, and Zhu 2013). To capture the degree of similarity between firms in the scandal-affected industry, we follow Goldman, Peyer, and Stefanescu (2012) and draw on the Parrino (1997) industry homogeneity index. As firms in an industry use similar production technologies and compete in similar product markets, news (e.g., about celebrity endorser scandals) similarly affect investor expectations and hence their stock prices. We therefore operationalize industry homogeneity based on similar stock return movements over time measured by their partial correlation. A higher correlation indicates higher similarity. We calculate the index for firms within scandal-affected industry's two-digit standard industrial classification (SIC) codes. SIC codes indicate a company's type of business and have a hierarchical structure, where the first two digits identify the major group (e.g., 50 = wholesale trade-durable goods); the third digit identifies the industry group (e.g., 509 = miscellaneous durable goods); and the fourth digit identifies the specialization of the business (e.g., 5091 = sporting and recreational goods and supplies). Different levels of SIC codes can be used depending on how detailed a company or industry needs to be considered.

Control Variables

We also include several competitor firm- and industry-related control variables in our model for a robustness check (Sorescu, Warren, and Ertekin 2017). First, following Knittel and Stango's (2014) approach to distinguish endorsement-intensive from nonintensive competitors, we include competitor

Table 2. Average abnormal return sponsors.

Event Day	Number of Observations in Sponsors' Sample	Average AR	Positive: Negative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
−2	189	−0.13%	86:103	−1.15	−1.21
−1	189	0.05%	85:104	−0.41	−0.40
0	189	−0.32%	78:111	−2.69***	−2.70***
1	189	−0.38%	70:119	−3.84***	−4.10***
2	189	−0.11%	86:103	−1.14	−1.28
3	189	−0.12%	88:101	−1.53	−1.04
4	189	−0.04%	78:111	−1.70*	−2.24**
5	189	−0.09%	87:102	−0.96	−1.09

Note. AR = abnormal return; positive: negative average AR = share of positive and negative average ARs of respective event day in the sample.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

endorsement intensity, which measures whether a competitor uses celebrity endorsements too. To control for other variables at the competitor firm level, we include the competitor return on assets (i.e., earnings before interest and taxes in relation to total assets) in our analyses, as this factor is among the most frequently used measures of firm performance (Rust and Huang 2012). Further, we control for competitor marketing expenditures as a large body of work shows that advertising has a direct effect on various firm performance metrics, including sales, profit, and firm value (Joshi and Hanssens 2010).

Second, we control for potential industry-related influences on spillovers, which are unrelated to a specific sponsor or competitor firm. Because some industries may be more prone to celebrity endorser scandals than others, we create a dummy variable to identify previously affected industries (Kang 2008). Finally, we use the Herfindahl–Hirschman index (HHI) to determine the degree of market concentration or competition in the scandal-affected industry; a high (low) value indicates a high (low) level of concentration and low (high) competition in the industry. We calculate the HHI as the sum of the square of market shares, based on sales figures of firms in the same four-digit historical SIC code, including all firms listed in the Compustat North America database (e.g., Lang and Stulz 1992).

Results

First- and Second-Order Spillover Effect

To determine the extent to which a celebrity endorser scandal affects a sponsor's competitors (i.e., second-order spillover), we first validate that the scandal also affects sponsors (i.e., first-order spillover), that is, that our sample of scandals provides a sound basis for analyzing spillover effects. Tables 2 and 3 show the results of our event study for the sponsors, including daily AARs for the selected event window and several short- and longer-term CAARs. To assess the statistical significance of AARs and CAARs, we rely on the adjusted standardized cross-sectional test, which accounts for cross-sectional and serial correlation and is robust to event-induced volatility (Kolari and Pynnönen 2010). To verify that our results are also not driven by outliers (Kolari and Pynnönen 2011), we complement our analyses with the generalized rank test as a nonparametric test (for more details on our statistical tests, see Appendix A).

We find significant ($p < .01$), negative AAR values at the event date and the day after, equal to −0.32% and −0.38%, respectively. We also find negative and significant ($p < .01$) CAARs for several event windows, including a two-day [0; 1] window of −0.69%, a six-day [0; 5] window of −1.05%, and the maximum eight-day CAAR [−2; 5] of −1.13%. The high values for the adjusted standardized cross-sectional and generalized rank test statistics support our choice of the eight-day window (see Geyskens, Gielens, and Dekimpe 2002; Homburg, Vollmayr, and Hahn 2014). The AAR results are comparable to those reported by Bartz, Molchanov, and Stork (2013), namely, negative abnormal returns of −0.29% on the event date and −0.24% the day after. Our CAAR [−2; 5] also is similar to the −1.25% that Russell, Mahar, and Drewniak (2005) report for their full sample of negative events. Thus, we conclude that we may use this sample for a spillover analysis.

Tables 4 and 5 summarize the results of our event study for the competitors, including daily AARs for the event window and several shorter- and longer-term CAARs. Across all events, the cumulative effects over two-day [0; 1], six-day [0; 5], and eight-day [−2; 5] windows are negative, as indicated by the statistically significant CAARs of −0.22%, −0.45%, and −0.37%, respectively, corresponding to event-induced average losses in competitor firm value of about $87 million to $176 million. The high values of the adjusted standardized cross-sectional and generalized rank test statistics support a six- [0; 5] or eight-day [−2; 5] event window for the competitors (see

Table 3. Cumulative average abnormal return sponsors.

Event Window	Number of Observations in Sponsors' Sample	Cumulative Average AR	Positive: Negative Cumulative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
[0;5]	189	−1.05%	62:127	−5.35***	−5.56***
[0;4]	189	−0.96%	67:122	−5.15***	−5.13***
[0;3]	189	−0.92%	62:127	−4.74***	−5.09***
[0;2]	189	−0.80%	57:132	−4.40***	−5.37***
[0;1]	189	−0.69%	71:118	−4.32***	−4.37***
[−2;5]	189	−1.13%	68:121	−5.74***	−5.63***
[−2;4]	189	−1.04%	73:116	−5.32***	−4.95***
[−2;3]	189	−1.00%	69:120	−4.75***	−4.58***
[−2;2]	189	−0.88%	67:122	−4.47***	−4.55***
[−2;1]	189	−0.77%	71:118	−3.90***	−3.98***
[−2;0]	189	−0.40%	77:112	−2.53**	−2.92***

Note. AR = abnormal return; positive: negative cumulative average AR = share of positive and negative cumulative average ARs of respective event window in the sample.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

Table 4. Average abnormal return competitors.

Event Day	Number of Observations in Competitors' Sample	Average AR	Positive: Negative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
−2	594	0.01%	300:294	0.09	0.13
−1	594	0.07%	295:299	0.69	0.23
0	594	−0.10%	287:307	−1.97**	−1.62*
1	594	−0.12%	269:325	−2.42**	−1.98**
2	594	−0.02%	302:292	0.47	0.17
3	594	−0.04%	286:308	−1.52*	−0.78
4	594	−0.12%	268:326	−2.46**	−2.01**
5	594	−0.05%	288:306	−1.48*	−0.96

Note. AR = abnormal return; positive: negative average AR = share of positive and negative average ARs of respective event day in the sample.
**$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

Table 5. Cumulative average abnormal return competitors.

Event Window	Number of Observations in Competitors' Sample	Cumulative Average AR	Positive: Negative Cumulative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
[0;5]	594	−0.45%	265:329	−3.58***	−2.86***
[0;4]	594	−0.34%	267:327	−3.31***	−2.71***
[0;3]	594	−0.23%	270:324	−2.45**	−1.85*
[0;2]	594	−0.24%	279:315	−1.52*	−1.64*
[0;1]	594	−0.22%	276:318	−2.58***	−2.17**
[−2;5]	594	−0.37%	263:331	−3.13***	−2.58***
[−2;4]	594	−0.24%	269:325	−2.25**	−1.98**
[−2;3]	594	−0.13%	274:320	−1.75*	−1.45
[−2;2]	594	−0.16%	287:307	−0.95	−1.07
[−2;1]	594	−0.10%	277:318	−1.57	−1.58
[−2;0]	594	0.01%	281:313	−0.59	−0.57

Note. AR = abnormal return; positive: negative cumulative average AR = share of positive and negative cumulative ARs of respective event window in the sample.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

Geyskens, Gielens, and Dekimpe 2002; Homburg, Vollmayr, and Hahn 2014). To ensure that the windows of the sponsor and competitor event studies are consistent, we chose the eight-day event window.

In support of hypothesis 1, these results indicate negative abnormal returns for competitors after a celebrity endorser scandal of a respective sponsor firm. However, as expected, the second-order spillover effect is smaller than the first-order effect on sponsor companies. These findings match the results of other spillover studies, such as Barnett and King's (2008) finding of a −0.15% spillover effect on competitors after an industrial accident by another firm in the U.S. chemical industry. Gande and Lewis (2009), analyzing the stock market reaction to filings of security class action lawsuits, find an average abnormal price decline for other firms of −0.32%. Chen, Ho, and Ik (2005) report a significant average loss of −0.12% for competitors of firms that announce new products.

Signal Strength and Similarity As Determinants of Second-Order Spillovers

To provide model-free evidence for hypotheses 2 and 3, we perform univariate analyses of competitor

CAARs for subsamples of signal strength (i.e., negative abnormal returns sponsor) and similarity (i.e., industry homogeneity) by dichotomizing the respective variables based on median splits (see Table 6). The results consistently indicate statistically significant negative CAARs for competitors of sponsors with high negative abnormal returns (i.e., high signal strength). For example, CAAR for the eight-day [−2; 5] window is −1.07%. Whereas the CAARs from competitors of sponsors with low negative abnormal returns (i.e., low signal strength) are consistently positive but not significant ($p > .10$). These findings are in line with hypothesis 2, which suggested that stronger signals of negative abnormal returns of the affected sponsors more negatively impact competitor abnormal returns.

Regarding similarity, the CAARs from competitors in high homogeneous industries are also consistently statistically significant negative and throughout all event windows more negative than those from competitors in low homogeneous industries (see Table 7). For example, CAAR for the eight-day [−2; 5] window is −0.71% with high industry homogeneity and 0.08% with low industry homogeneity. Again, this provides first evidence for hypothesis 3—that the greater the similarity regarding industry homogeneity, the more negative is the impact of celebrity endorser scandals on competitor abnormal returns.

Based on these event study-based results, we provide further evidence regarding hypotheses 2 and 3 by conducting cross-sectional regression analysis. No correlation among our independent and control variables exceeds 0.52, and the variance inflation factors range from 1.04 to 1.58, with a mean of 1.27, well below commonly accepted threshold levels (Gielens et al. 2008). Therefore, multicollinearity is not a problem.

Table 8 provides the results of our cross-sectional regression analysis. The baseline model includes only the two independent variables, regressed on the dependent variable, CAR_i [−2; 5] of the competitors. The negative and significant beta coefficient for the negative abnormal returns of the sponsor companies ($\beta = -.28$, $p < .01$) confirms hypothesis 2: competitors show higher negative abnormal returns when the abnormal returns of the affected sponsor company are more negative. Stock market participants rely on the signaling effect of this sponsor company's stock returns to predict the price for stocks of the competing firms. In support of hypothesis 3, the beta coefficient for industry homogeneity is negative and significant ($\beta = -0.12$, $p < 0.01$). Competitors of sponsor companies that operate in industries that are more similar (i.e., with higher homogeneity among firms) experience higher negative abnormal returns on average. A repeated analysis, without controlling for clusters at the event or firm level, provides consistent

Table 6. Cumulative average abnormal return competitors, by high vs. low negative abnormal returns sponsor (signal strength).

Event Window	Number of Observations in Competitors' Subsample	Cumulative Average AR	Positive: Negative Cumulative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
High negative abnormal returns sponsor					
[0;5]	298	−1.08%	103:195	−5.96***	−5.34***
[0;4]	299	−0.98%	109:190	−5.18***	−4.63***
[0;3]	296	−0.66%	120:176	−3.95***	−3.39***
[0;2]	303	−0.66%	119:184	−4.12***	−3.75***
[0;1]	298	−0.46%	123:175	−3.44***	−3.18***
[−2;5]	298	−1.07%	111:187	−4.73***	−4.50***
[−2;4]	300	−0.79%	123:177	−4.11***	−3.42***
[−2;3]	300	−0.62%	126:174	−3.20***	−2.89***
[−2;2]	298	−0.59%	129:169	−2.98***	−2.68***
[−2;1]	301	−0.41%	134:167	−2.21**	−1.92*
[−2;0]	298	−0.32%	137:161	−1.87*	−1.55
Low negative abnormal returns sponsor					
[0;5]	296	0.20%	162:134	0.99	1.22
[0;4]	295	0.20%	158:137	0.94	1.04
[0;3]	298	0.10%	150:148	0.78	0.84
[0;2]	291	0.20%	160:131	1.63	1.56
[0;1]	296	0.02%	153:143	−0.10	0.15
[−2;5]	296	0.34%	153:143	0.46	0.73
[−2;4]	294	0.16%	146:148	0.43	0.38
[−2;3]	294	0.23%	148:146	0.63	0.74
[−2;2]	296	0.27%	158:138	1.10	1.20
[−2;1]	293	0.13%	143:150	0.10	−0.34
[−2;0]	296	0.28%	144:152	1.01	0.69

Note. AR = abnormal return; positive: negative cumulative average AR = share of positive and negative cumulative ARs of respective event window in the sample.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

Table 7. Cumulative average abnormal return competitors, by high versus low industry homogeneity (similarity).

Event Window	Number of Observations in Competitors' Subsample	Cumulative Average AR	Positive: Negative Cumulative Average AR	Adjusted Standardized Cross-Sectional Test	Generalized Rank Test
High industry homogeneity					
[0;5]	283	−0.77%	113:170	−4.08***	−3.63***
[0;4]	283	−0.76%	109:174	−4.24***	−4.09***
[0;3]	283	−0.73%	103:180	−4.15***	−4.09***
[0;2]	283	−0.62%	110:173	−3.73***	−3.79***
[0;1]	283	−0.45%	112:171	−4.00***	−3.72***
[−2;5]	283	−0.71%	116:167	−3.30***	−3.07***
[−2;4]	283	−0.70%	110:173	−3.26***	−3.03***
[−2;3]	283	−0.67%	106:177	−3.22***	−3.27***
[−2;2]	283	−0.56%	115:168	−2.60***	−2.72***
[−2;1]	283	−0.40%	118:165	−2.41**	−2.68***
[−2;0]	283	−0.22%	121:162	−1.45	−1.66*
Low industry homogeneity					
[0;5]	311	−0.15%	152:159	−1.09	−0.57
[0;4]	311	−0.07%	158:153	−0.53	0.17
[0;3]	311	0.13%	167:144	0.71	1.52
[0;2]	311	0.10%	169:142	0.95	1.69*
[0;1]	311	0.00%	164:147	0.04	0.65
[−2;5]	311	0.08%	148:163	−0.78	−0.54
[−2;4]	311	0.02%	159:152	−0.23	0.23
[−2;3]	311	0.23%	168:143	0.88	1.36
[-2;2]	311	0.20%	172:139	1.08	1.62
[-2;1]	311	0.09%	159:152	0.33	0.50
[−2;0]	311	0.16%	160:151	0.70	0.90

Note. AR = abnormal return; positive: negative cumulative average AR = share of positive and negative cumulative ARs of respective event window in the sample.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

Table 8. Results of cross-sectional regression analysis.

		Model without Control Variables		Model with Control Variables	
Dependent Variable: CAR Competitor [−2; 5]	Direction of Hypothesis	β	SE	β	SE
Independent variables					
Negative abnormal returns sponsor	—	−0.28***	(0.05)	−0.28***	(0.05)
Industry homogeneity	—	−0.12***	(0.02)	−0.08*	(0.03)
Control variables					
Competitor endorsement intensity				0.03	(0.00)
Competitor marketing expenditures				−0.01	(0.00)
Competitor return on assets				0.06	(0.00)
Affected industry				0.01	(0.00)
Market concentration				0.02	(0.01)
R-squared		0.09		0.09	
Adj. *R*-squared		0.09		0.08	
F		20.44		7.10	
Number of observations in competitors' sample		594		594	

Note. Standardized beta coefficients; standard errors in parentheses; standard errors are heteroskedasticity robust and clustered at both event and firm level.
***$p < .01$; **$p < .05$; *$p < .10$ (two-tailed test).

support for hypotheses 2 and 3 and further evidence of the validity of the findings. The model is significant ($F = 20.44$, $p < 0.01$) and explains about 9% of the variance in competitors' CARs, in line with comparable studies of short-term abnormal returns around corporate events (e.g., Knittel and Stango 2014; Sood and Tellis 2009; Sorescu, Shankar, and Kushwaha 2007).

Robustness Checks

To ensure confidence in our results and affirm that our findings do not depend on the selected model parameters, we perform several robustness checks. To validate the results of our event study analysis, we use an alternative approach to estimate the expected returns of the sponsor and competitor firms. Specifically, we calculate the respective firm's abnormal return using the Fama–French five-factor model (Fama and French 2016). The obtained results are robust in this alternative model. In particular, the full event window CAARs [−2; 5] for first- and second-order spillovers remain significantly negative and comparable in size, confirming the main results of our event studies. Further, we also seek to validate the results of our cross-sectional regression model, with three checks. First, we reestimate our regression model with sponsor and competitor firms' CARs [0; 5], that is, assuming that there were no pre-event effects. The coefficients for the negative abnormal returns of the sponsor firms ($\beta = -0.30$, $p < 0.01$) and industry homogeneity ($\beta = -0.08$, $p < 0.05$) do not change substantially. Second, we reestimate our regression model including the sponsor and competitor firms' CARs [−2; 5], which we calculate using the Fama–French five-factor model (Fama and French 2016). The coefficients for the abnormal returns of the sponsor firms ($\beta = -0.27$, $p < 0.01$) and industry homogeneity ($\beta = -0.11$, $p < 0.10$) continue to reveal the expected signs and are significant. Third, to control for further potential effects, we repeat the regression analysis including the control variables (see Table 8). Again, the regression results for our hypotheses remain stable and significant with coefficients for the CAR of the sponsor firms of $\beta = -0.28$ ($p < 0.01$) and for industry homogeneity of $\beta = -0.08$ ($p < 0.10$). None of the competitor firm-related (i.e., competitor endorsement intensity, competitor marketing expenditures, competitor return on assets) or industry-related control variables (i.e., affected industry, market concentration) had a significant effect. F statistics show that the model without control variables provides a better fit to the data, and adjusted R-squared does not improve. In sum, these results are consistent with our expectation that investors largely disregard factors other than those we hypothesized.

Discussion and Conclusion

Theoretical Implications

This study contributes to extant celebrity endorsement and marketing–finance literature in several ways. We present evidence of spillover effects between a sponsor company affected by a celebrity endorser scandal and its direct competitors and thereby add to extant research which did not answer the question whether any positive or negative spillover effects generalize (Knittel and Stango 2014). Using a broad sample of 121 real-life celebrity endorser scandals over a 35-year period, our results provide robust evidence of a predominantly contagion effect on competitor firm value. By addressing this research gap, we demonstrate how far-reaching the implications of a celebrity endorser scandal can be. This finding also enriches general spillover literature. Compared with those in other disciplines (e.g., finance), spillover effects related to marketing functions are understudied (Fosfuri and Giarratana 2009). The current study provides evidence that advertising failures by one company may significantly affect other companies in the industry, even when market participants consider those failures to be minor events.

Beyond the spillover effect, we analyze variables that influence the direction and magnitude of the spillover and find that a scandal's negative spillover effect is stronger when the event affects the sponsor firm more powerfully and when the industry is more homogenous. Building on our broad sample of historical celebrity endorser scandals, we do not detect any impact of the competitor's endorsement intensity (compare Knittel and Stango 2014). Rather, the abnormal returns of endorsement-intensive and nonintensive competitors indicate average negative stock price reactions for both groups. Thus, our empirical results show that stock market participants largely disregard such factors when deciding how to value a competitor's stocks following a celebrity endorser scandal. Instead, they focus on the sponsor firm's negative abnormal returns, which might already include an endorsement-intensity effect, and industry homogeneity in the aftermath of minor events. In such a context, readily observable features gain importance, relative to firm-specific factors, whose implications for competitor performance are difficult to assess in the short term by stock market participants. Thus, endorsement-intensity and reputation risk do not appear to be generalizable theoretical mechanisms of second-order spillover effects, whereas signaling and similarity do.

Finally, our empirical results on first-order spillover effects contribute to the limited published research pertaining to this issue. We provide robust evidence of a negative, significant, average first-order spillover effect on sponsor companies following an endorser scandal. This replication of prior empirical findings can support generalization and theory building (Lynch et al. 2015).

Managerial Implications

In addition to these theoretical implications, our study has implications for managers and practitioners. Sponsor companies typically seek to protect against celebrity scandals by including morality clauses in endorsement contracts, such that they may terminate the relationship on the grounds of inadequate behavior, or by taking out disgrace insurance policies to limit their financial exposure (Yannopoulos 2012). They closely monitor the actions of celebrity endorsers to respond appropriately and promptly. But our study suggests that, due to spillover effects, competitors also need to keep an eye on their rivals' celebrity endorsers. Firms can adjust their risk management systems to issue warnings when a peer firm has gotten involved in a celebrity scandal. It could trigger a more detailed investigation to evaluate the consequences for their own firm when the competitor was strongly negatively affected. Furthermore, business intelligence processes should be adjusted to identify rival sponsors' potential risk exposure in celebrity endorsements that may spill over to the company when industry homogeneity is high.

Existing research cites the impact of celebrity endorsement scandals on sponsor brand sales (Bergkvist and Zhou 2016), so scandals are likely to affect competitor sales as well. In practice, advertising executives and brand managers pay close attention to sales figures following a negative event, because firms use brand sales as a key performance measure that affects managers' own compensation (Elberse and Verleun 2012). If they recognize the potential risk of spillover effects following a celebrity endorser scandal, competitor brand managers can better explain variations in their own brand sales and appropriately highlight this cause in their reports. Even if senior management decides that no further actions are required in response to a sponsor firm's scandal, acknowledging the possible spillover effects may prevent false conclusions about their own brand's performance. Senior management similarly can use such arguments to explain firm sales and stock performance to the supervisory board or shareholders (Elberse and Verleun 2012).

Limitations and Further Research

Several limitations of this study suggest promising avenues for continued research. First, we required companies to be direct competitors to be included in our sample, in line with Carrillat, d'Astous, and Christianis's (2014) finding of significant negative spillover effects only for companies that are directly associated with the scandal-affected sponsor company. However, other studies adopt a much broader competitor definition, such as those based on firms' SIC codes (e.g., Gande and Lewis 2009). Research that applies such a broad definition could explore whether firms which are in the same industry according to SIC codes but which are not direct competitors also experience negative spillovers.

Second, as is common for event studies, we use abnormal returns, which measure the change in firm value, as our outcome variable. Firm value is a well-established performance measure (Sorescu, Warren, and Ertekin 2017) driven by investors' expectations, so it depends on the accuracy of their forecasts. Employing other outcome metrics such as sales might overcome some potential biases and offer additional fruitful insights.

Third, our study includes mainly U.S. public companies. This limitation is warranted, to ensure consistency in our results. However, it also introduces two major biases. That is, the use of celebrity endorsements varies widely across markets, and cross-cultural differences likely affect consumer perceptions of celebrity endorsements (Bergkvist and Zhou 2016). Thus, our results might not apply to other markets or cultural contexts. In addition, public companies have different characteristics and behaviors than private companies (Trostel and Nichols 1982). Researchers thus might investigate whether private competitors and firms from different cultural environments experience negative spillover effects, as well as what features mainly distinguish them from their public U.S. peers.

Fourth, while the 35-year period from 1981 to 2015 covered by our data is a strength of our study, it also raises the question of whether the results would change if shorter or specific periods were considered. For example, social media might have an impact on our results (Borah and Tellis 2016). We conducted a post hoc test on this question with a reduced sample starting in 2004, the year Facebook went online as the most successful social network in existence to date. Regarding hypothesis 1, we again find significantly negative CAAR $[-2; 5]$ of -0.31% for the competitors. The regression results for hypotheses 2 and 3 remain stable with coefficients for sponsor firm CAR of $\beta = -0.22$ ($p < 0.01$) and for industry homogeneity of $\beta = -0.13$ ($p < 0.01$). Future research could further examine the role of social media in spillovers from celebrity endorser scandals and include more recent celebrity endorser scandals after the year 2015.

Fifth, some of our conceptual choices create opportunities for future research. For example, following a celebrity scandal, sponsor companies must decide how to deal with the reputational crisis, such as by dismissing or supporting the endorser (Louie and Obermiller 2002). Competitor firms similarly might take proactive action, for example, by issuing defensive institutional statements or attempting to weaken the sponsor firm further and improving their own situation by enhancing their advertising activities. We did not include this option in our analysis to maintain our study focus on investors' immediate reactions; any measures adopted by competitors likely take some time to unfold. Moreover, we based our conceptualization on accessibility-diagnosticity theory, which fits well with our spillover phenomenon. However, other theories could provide alternative perspectives on this phenomenon (e.g., microeconomics; see Takeda 2022). Further research might investigate these questions.

References

Agrawal, Jagdish, and Wagner A. Kamakura. 1995. "The Economic Worth of Celebrity Endorsers: An Event Study Analysis." *Journal of Marketing* 59 (3):56–62. doi:10.2307/1252119

Ahmed, Parvez, John Gardella, and Sudhir Nanda. 2002. "Wealth Effect of Drug Withdrawals on Firms and Their Competitors." *Financial Management* 31 (3):21–41. doi:10.2307/3666313

Alba, Joseph W., and Amitava Chattopadhyay. 1986. "Salience Effects in Brand Recall." *Journal of Marketing Research* 23 (4):363–9. doi:10.2307/3151812

Anderson, Eric T., and Duncan Simester. 2013. "Advertising in a Competitive Market: The Role of Product Standards, Customer Learning, and Switching Costs." *Journal of Marketing Research* 50 (4):489–504. doi:10.1509/jmr.11.0538

Barnett, Michael L., and Andrew A. King. 2008. "Good Fences Make Good Neighbors: A Longitudinal Analysis of an Industry Self-Regulatory Institution." *Academy of Management Journal* 51 (6):1150–70. doi:10.5465/amj.2008.35732609

Bartz, Sherry, Alexander Molchanov, and Philip A. Stork. 2013. "When a Celebrity Endorser is Disgraced: A Twenty-Five-Year Event Study." *Marketing Letters* 24 (2):131–41. doi:10.1007/s11002-013-9229-2

Bergkvist, Lars, and Kris Qiang Zhou. 2016. "Celebrity Endorsements: A Literature Review and Research Agenda." *International Journal of Advertising* 35 (4):642–63. doi:10.1080/02650487.2015.1137537

Borah, Abishek, and Gerard J. Tellis. 2016. "Halo (Spillover) Effects in Social Media: Do Product Recalls of One Brand Hurt or Help Rival Brands?" *Journal of Marketing Research* 53 (2):143–60. doi:10.1509/jmr.13.0009

Brown, Stephen J., and Jerold B. Warner. 1985. "Using Daily Stock Returns: The Case of Event Studies." *Journal of Financial Economics* 14 (1):3–31. doi:10.1016/0304-405X(85)90042-X

Carrillat, Francois A., and Jasmina Ilicic. 2019. "The Celebrity Capital Life Cycle: A Framework for Future Research Directions on Celebrity Endorsement." *Journal of Advertising* 48 (1):61–71. doi:10.1080/00913367.2019.1579689

Carrillat, Francois A., Alain d'Astous, and Haralambos Christianis. 2014. "Guilty by Association: The Perils of Celebrity Endorsement for Endorsed Brands and Their Direct Competitors." *Psychology & Marketing* 31 (11):1024–39. doi:10.1002/mar.20750

Chen, Sheng-Syan, Kim Wai Ho, and Kueh Hwa Ik. 2005. "The Wealth Effect of New Product Introductions on Industry Rivals." *The Journal of Business* 78 (3):969–96. doi:10.1086/429650

Diestre, Luis, and Nandini Rajagopalan. 2014. "Toward an Input-Based Perspective on Categorization: Investor Reactions to Chemical Accidents." *Academy of Management Journal* 57 (4):1130–53. doi:10.5465/amj.2011.1096

Eckbo, B. Espen. 1983. "Horizontal Mergers, Collusion, and Stockholder Wealth." *Journal of Financial Economics* 11 (1–4):241–73. doi:10.1016/0304-405X(83)90013-2

Edeling, Alexander, Shuba Srinivasan, and Dominique M. Hanssens. 2021. "The Marketing–Finance Interface: A New Integrative Review of Metrics, Methods, and Findings and an Agenda for Future Research." *International Journal of Research in Marketing* 38 (4):857–76. doi:10.1016/j.ijresmar.2020.09.005

Elberse, Anita, and Jeroen Verleun. 2012. "The Economic Value of Celebrity Endorsements." *Journal of Advertising Research* 52 (2):149–65. doi:10.2501/JAR-52-2-149-165

Fama, Eugene F., and Kenneth R. French. 2016. "Dissecting Anomalies with a Five-Factor Model." *Review of Financial Studies* 29 (1):69–103. doi:10.1093/rfs/hhv043

Fazio, Russel H., Jeaw-Mei Chen, Elisabeth C. McDonel, and Steven J. Sherman. 1982. "Attitude Accessibility, Attitude-Behavior Consistency, and the Strength of the Object-Evaluation Association." *Journal of Experimental Social Psychology* 18 (4):339–57. doi:10.1016/0022-1031(82)90058-0

Feldman, Jack M., and John G. Lynch. Jr. 1988. "Self-Generated Validity and Other Effects of Measurement on Belief, Attitude, Intention, and Behavior." *Journal of Applied Psychology* 73 (3):421–35. doi:10.1037/0021-9010.73.3.421

Fosfuri, Andrea, and Marco S. Giarratana. 2009. "Masters of War: Rivals' Product Innovation and New Advertising in Mature Product Markets." *Management Science* 55 (2):181–91. doi:10.1287/mnsc.1080.0939

Gande, Amar, and Craig M. Lewis. 2009. "Shareholder-Initiated Class Action Lawsuits: Shareholder Wealth Effects and Industry Spillover." *Journal of Financial and Quantitative Analysis* 44 (4):823–50. doi:10.1017/S0022109009990202

Gaur, Ajai, Shavin Malhotra, and Pengcheng Zhu. 2013. "Acquisition Announcements and Stock Market Valuations of Acquiring Firms' Rivals: A Test of the Growth Probability Hypothesis in China." *Strategic Management Journal* 34 (2):215–32. doi:10.1002/smj.2009

Geyskens, Inge, Katrijn Gielens, and Marnik G. Dekimpe. 2002. "The Market Valuation of Internet Channel Additions." *Journal of Marketing* 66 (2):102–19. doi:10.1509/jmkg.66.2.102.18478

Gielens, Katrijn, Linda M. van de Gucht, Jan-Benedict E. M. Steenkamp, and Marnik G. Dekimpe. 2008. "Dancing with a Giant: The Effect of Wal-Mart's Entry into the United Kingdom on the Performance of European Retailers." *Journal of Marketing Research* 45 (5):519–34. doi:10.1509/jmkr.45.5.519

Goldman, Eitan, Urs Peyer, and Irina Stefanescu. 2012. "Financial Misrepresentation and Its Impact on Rivals." *Financial Management* 41 (4):915–45. doi:10.1111/j.1755-053X.2012.01211.x

Hadlock, Charles J., and Ramana Sonti. 2012. “Financial Strength and Product Market Competition: Evidence from Asbestos Litigation.” *Journal of Financial and Quantitative Analysis* 47 (1):179–211. doi:10.1017/S0022109011000639

Herr, Paul M., Frank R. Kardes, and John M. Kim. 1991. “Effects of Word-of-Mouth and Product-Attribute Information on Persuasion: An Accessibility-Diagnosticity Perspective.” *Journal of Consumer Research* 17 (4):454–62. doi:10.1086/208570

Homburg, Christian, Josef Vollmayr, and Alexander Hahn. 2014. “Firm Value Creation through Major Channel Expansions: Evidence from an Event Study in the United States, Germany, and China.” *Journal of Marketing* 78 (3):38–61. doi:10.1509/jm.12.0179

Joshi, Amit, and Dominique M. Hanssens. 2010. “The Direct and Indirect Effects of Advertising Spending on Firm Value.” *Journal of Marketing* 74 (1):20–33. doi:10.1509/jmkg.74.1.20

Kang, Eugene. 2008. “Director Interlocks and Spillover Effects of Reputational Penalties from Financial Reporting Fraud.” *Academy of Management Journal* 51 (3):537–55. doi:10.5465/amj.2008.32626007

Kantar. 2021. "How Can Celebrities Help to Maximise the Brand Impact of Advertising?" Accessed December 10, 2021. https://www.kantar.com/inspiration/advertising-media/how-can-celebrities-help-to-maximise-the-brand-impact-of-advertising

Kashmiri, Saim, Cameron Duncan Nicol, and Liwu Hsu. 2017. “Birds of a Feather: Intra-Industry Spillover of the Target Customer Data Breach and the Shielding Role of IT, Marketing, and CSR.” *Journal of the Academy of Marketing Science* 45 (2):208–28. doi:10.1007/s11747-016-0486-5

Knittel, Christopher R., and Victor Stango. 2014. “Celebrity Endorsements, Firm Value, and Reputation Risk: Evidence from the Tiger Woods Scandal.” *Management Science* 60 (1):21–37. doi:10.1287/mnsc.2013.1749

Kolari, James W., and Seppo Pynnönen. 2010. “Event Study Testing with Cross-Sectional Correlation of Abnormal Returns.” *Review of Financial Studies* 23 (11):3996–4025. doi:10.1093/rfs/hhq072

Kolari, James W., and Seppo Pynnönen. 2011. “Nonparametric Rank Tests for Event Studies.” *Journal of Empirical Finance* 18 (5):953–71. doi:10.1016/j.jempfin.2011.08.003

Lang, Larry H. P., and René M. Stulz. 1992. “Contagion and Competitive Intra-Industry Effects of Bankruptcy Announcements.” *Journal of Financial Economics* 32 (1):45–60. doi:10.1016/0304-405X(92)90024-R

Louie, Therese A., Robert L. Kulik, and Robert Jacobson. 2001. “When Bad Things Happen to the Endorsers of Good Products.” *Marketing Letters* 12 (1):13–23. doi:10.1023/A:1008159717925

Louie, Therese A., and Carl Obermiller. 2002. “Consumer Response to a Firm’s Endorser (Dis)Association Decisions.” *Journal of Advertising* 31 (4):41–52. doi:10.1080/00913367.2002.10673684

Lynch, John G., Eric T. Bradlow, Joel C. Huber, and Donald R. Lehmann. 2015. “Reflections on the Replication Corner: In Praise of Conceptual Replications.” *International Journal of Research in Marketing* 32 (4):333–42. doi:10.1016/j.ijresmar.2015.09.006

MacKinlay, A. Craig. 1997. “Event Studies in Economics and Finance.” *Journal of Economic Literature* 35 (1):13–39.

McAlister, Leigh, Raji Srinivasan, and MinChung Kim. 2007. “Advertising, Research and Development, and Systematic Risk of the Firm.” *Journal of Marketing* 71 (1):35–48. doi:10.1509/jmkg.71.1.35

McWilliams, Abagail, and Donald Siegel. 1997. “Event Studies in Management Research: Theoretical and Empirical Issues.” *Academy of Management Journal* 40 (3):626–57. doi:10.2307/257056

Oxley, Joanne E., Rachelle C. Sampson, and Brian S. Silverman. 2009. “Arms Race or Détente? How Interfirm Alliance Announcements Change the Stock Market Valuation of Rivals.” *Management Science* 55 (8):1321–37. doi:10.1287/mnsc.1090.1022

Pacicco, Fausto, Luigi Vena, and Andrea Venegoni. 2018. “Event Study Estimations Using Stata: The Estudy Command.” *The Stata Journal: Promoting Communications on Statistics and Stata* 18 (2):461–76. doi:10.1177/1536867X1801800211

Parrino, Robert. 1997. “CEO Turnover and outside Succession. A Cross-Sectional Analysis.” *Journal of Financial Economics* 46 (2):165–97. doi:10.1016/S0304-405X(97)00028-7

Roehm, Michelle L., and Alice M. Tybout. 2006. “When Will a Brand Scandal Spill over, and How Should Competitors Respond?” *Journal of Marketing Research* 43 (3):366–73. doi:10.1509/jmkr.43.3.366

Russell, Michael, James Mahar, and Betsy Drewniak. 2005. “Examination of Stock Market Response to Publicity Surrounding Athletic Endorsers.” *Marketing Management Journal* 15 (2):67–79.

Rust, Roland T., and Ming-Hui Huang. 2012. “Optimizing Service Productivity.” *Journal of Marketing* 76 (2):47–66. doi:10.1509/jm.10.0441

Sahni, Navdeep S. 2016. “Advertising Spillovers: Evidence from Online Field Experiments and Implications for Returns on Advertising.” *Journal of Marketing Research* 53 (4):459–78. doi:10.1509/jmr.14.0274

Schimmer, Markus, Anton Levchenko, and Simon Müller. 2015. "EventStudyTools (Research Apps)." Accessed March 22, 2016. http://www.eventstudytools.com

Shapiro, Bradley T. 2018. “Positive Spillovers and Free Riding in Advertising of Prescription Pharmaceuticals: The Case of Antidepressants.” *Journal of Political Economy* 126 (1):381–437. doi:10.1086/695475

Song, Moon H., and Ralph A. Walkling. 2000. “Abnormal Returns to Rivals of Acquisition Targets: A Test of the Acquisition Probability Hypothesis.” *Journal of Financial Economics* 55 (2):143–71. doi:10.1016/S0304-405X(99)00048-3

Sood, Ashish, and Gerard J. Tellis. 2009. “Do Innovations Really Pay off? Total Stock Market Returns to Innovation.” *Marketing Science* 28 (3):442–56. doi:10.1287/mksc.1080.0407

Sorescu, Alina, Venkatesh Shankar, and Tarun Kushwaha. 2007. “New Product Announcements and Shareholder Value: Don’t Make Promises You Can’t Keep.” *Journal of Marketing Research* 44 (3):468–89. doi:10.1509/jmkr.44.3.468

Sorescu, Alina, Nooshin L. Warren, and Larisa Ertekin. 2017. "Event Study Methodology in the Marketing Literature: An Overview." *Journal of the Academy of Marketing Science* 45 (2):186–207. doi:10.1007/s11747-017-0516-y

Takeda, Fumiko. 2022. "Do Sport Sponsorship Announcements Help or Hurt Rival Sponsors' Market Values?" *Journal of Advertising Research* 62 (2):167–76. doi:10.2501/JAR-2022-007

Till, Brian D., and Terence A. Shimp. 1998. "Endorsers in Advertising: The Case of Negative Celebrity Information." *Journal of Advertising* 27 (1):67–82. doi:10.1080/00913367.1998.10673543

Trostel, Albert O., and Mary Lippitt Nichols. 1982. "Privately-Held and Publicly-Held Companies: A Comparison of Strategic Choices and Management Processes." *Academy of Management Journal* 25 (1):47–62. doi:10.5465/256023

Yannopoulos, Peter. 2012. "Celebrity Advertising: Literature Review and Propositions." *World Review of Business Research* 2 (4):24–36.

Yu, Xin, Peng Zhang, and Ying Zheng. 2015. "Corporate Governance, Political Connections, and Intra-Industry Effects: Evidence from Corporate Scandals in China." *Financial Management* 44 (1):49–80. doi:10.1111/fima.12064

Appendix A. Event study methodology

We defined the daily abnormal return AR_{it} for a firm i at time t as the difference between the observed daily return R_{it} and an estimated expected or normal return $E(R_{it})$ (MacKinlay 1997):

$$AR_{it} = R_{it} - E(R_{it}). \tag{A1}$$

Then we applied the market model to obtain estimates of the expected returns (e.g., Gielens et al. 2008):

$$E(R_{it}) = \alpha_i + \beta_i R_{mt}, \tag{A2}$$

where R_{mt} denotes the daily return of a benchmark index, α_i and β_i are the firm-specific intercept and slope parameter obtained from regressing R_{it} on R_{mt} over a predefined estimation window preceding the event date. Following MacKinlay (1997), we chose a 250-trading-day estimation window, ending 30 days before the event date, a period which in total covers approximately one year in calendar days and therefore accounts for seasonality effects. Consistent with other studies, we excluded firms that did not have at least 100 daily returns in the entire estimation window (Song and Walkling 2000). The broad-based S&P 500 Index provides the relevant benchmark index for the market model (Homburg, Vollmayr, and Hahn 2014).

To capture potential leakage of information prior to the event date (i.e., the day $t = 0$ where the media make the scandal public) and the dissemination of information over time after the event date, we aggregate the abnormal returns of a sponsor or competitor during the event window $[-t_1; t_2]$ into a cumulative abnormal return, CAR_i, with $-t_1$ and t_2 reflecting days prior and after the event date, respectively (Geyskens, Gielens, and Dekimpe 2002):

$$CAR_i \ [-t_1; t_2] = \sum_{t=-t_1}^{t_2} AR_{it}. \tag{A3}$$

According to McWilliams and Siegel (1997), "[A]n event window should be as short as possible [but] long enough to capture the significant effect of the event" (p. 636). One may argue that most celebrity endorser scandals are unanticipated (Louie, Kulik, and Jacobson 2001), though in some cases unspecified rumors may spread prior to the date that the broad public hears about the scandal, and there might be delays in media coverage of an event (e.g., media needs time to check facts before they report a scandal). Therefore, most marketing studies use event windows that include at least one day before the event to account for the possibility that some market participants heard about the event before it was picked up by the media (Sorescu, Warren, and Ertekin 2017). Extant event studies in the context of scandals use pre-event windows of two or even more days (Bartz, Molchanov, and Stork 2013; Goldman, Peyer, and Stefanescu 2012; Yu, Zhang, and Zheng 2015). In addition, it might take time for a scandal to unfold fully, such that all relevant stakeholders become aware of it. Especially in a spillover context, market participants may need time to recognize possible consequences for competitors. Accordingly, comparable spillover studies of industrial accidents (Barnett and King 2008) or drug withdrawals (Ahmed, Gardella, and Nanda 2002) extend the window to five days after the event. Based on these considerations, we consider an event window from two trading days before ($-t_1 = -2$) the event date $t = 0$ to five days after it ($t_2 = 5$).

Because our study includes multiple events, we average (a) firm-specific ARs for individual days into average abnormal returns, AAR_t, including all sponsor or competitor firms in the respective sample (N), and (b) for the whole event window $[-t_1; t_2]$ into cumulative average abnormal returns, CAAR (MacKinlay 1997):

$$AAR_t = \sum_{i=1}^{N} AR_{it}/N \tag{A4}$$

$$CAAR \ [-t_1, t_2] = \sum_{t=-t_1}^{t_2} AAR_t. \tag{A5}$$

A statistical challenge common to all event studies analyzing spillover effects is the inability to consider competitors' returns as independent observations; by definition, they represent the same industry and measurement period (Brown and Warner 1985). We therefore assess the statistical significance of AARs and CAARs with the adjusted standardized cross-sectional test, which accounts for cross-sectional and serial correlation and is robust to event-induced volatility (Kolari and Pynnönen 2010). We complement the parametric adjusted standardized cross-sectional test with the generalized rank test as a nonparametric test to verify that our results are not driven by outliers (Kolari and Pynnönen 2011). Both test statistics are more conservative than alternative tests such as the Patell test (i.e., the null hypothesis is less likely to be rejected in our tests). We rely on EventStudyTools software (Schimmer, Levchenko, and Müller 2015) and STATA's estudy command (Pacicco, Vena, and Venegoni 2018) to estimate the abnormal returns and test for significance.

Appendix B. Model variables and data sources

Variable	Description	Data Source(s)	Exemplary Literature
Dependent variable			
Abnormal returns competitor	Difference between a competitor's actual return and its expected return through an eight-day [−2; 5] event window	S&P GMI	Oxley, Sampson, and Silverman (2009)
Independent variables			
Negative abnormal returns sponsor	Difference between a sponsor firm's actual return and its expected return through an eight-day [−2; 5] event window; returns reversed to reflect negative returns	S&P GMI	Gaur, Malhotra, and Zhu (2013)
Industry homogeneity	Partial correlation between monthly common stock returns and an industry equal-weighted index within scandal-affected industry's two-digit SIC code classification	Compustat, 10-K	Goldman, Peyer, and Stefanescu (2012)
Competitor firm control variables			
Competitor endorsement intensity	Dummy variable coded 1 if a Google search for "(competitor name) celebrity endorsement" over a pre-event window of three years reveals that the competitor was engaged in at least one celebrity endorsement deal; coded 0 otherwise	Coded (Google)	Knittel and Stango (2014)
Competitor marketing expenditures	Competitor's cost of advertising media and promotional expenses in the fiscal year before the event	Compustat	McAlister, Srinivasan, and Kim (2007)
Competitor return on assets	Competitor's earnings before interest and taxes in the fiscal year before the event in relation to its average of total assets in the years before and at the time of the event	S&P GMI, Compustat, 10-K	Rust and Huang (2012)
Industry control variables			
Affected industry	Dummy variable coded 1 if a celebrity endorser scandal has occurred within the focal industry (defined by its two-digit SIC code) in the year before the event; coded 0 otherwise	Coded (Google, LexisNexis, Compustat)	Kang (2008)
Market concentration	Sales-based Herfindahl-Hirschman Index (HHI) within scandal-affected industry's four-digit SIC code classification	Compustat	Lang and Stulz (1992)

Note. S&P GMI = S&P Global Market Intelligence; SIC = standard industrial classification.