The Impact of Film Product Placement on Firm Market Value

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Due to the diminishing effectiveness of broadcast advertising, firms are increasingly turning to product placements in films and television to promote their products. A growing stream of product placement research has conducted content analyses of product placements, surveys of audience and practitioner views on the practice, and experiments to gauge the placement's impact on memory, brand attitudes, and purchase intent. However, little is known about whether film product placement leads to increased firm market value. To fill this gap, this paper uses an event study methodology to examine the impact of film product placement on a firm's stock market return. An examination of 157 product placements among films during the year 2002 revealed a positive mean cumulative abnormal return of 0.90% for firms during the film's opening. Results from a cross-sectional regression offer new insight regarding how firm, film, and execution characteristics relate to the direction and magnitude of investors' judgments about the placement's worth. Tie-in advertising augmented the product placement's shareholder wealth creation, but audience absorption, critical acclaim, and violent film content inhibited the creation of shareholder value.

Research in marketing has long examined the ways in which firms enhance their exposure to consumers. For instance, considerable attention has been directed at television advertising (e.g., Horn and McEwen 1977), print advertising (e.g., Burke and Srull 1988), and event sponsorships (e.g., Gardner and Shuman 1987). A more recent area of investigation is the use of product placements in different media contexts.

Product placement is the paid inclusion of branded products or brand identifiers through audio or visual means within mass media programming (Balasubramanian 1994; Karrh 1998)[1]. Film product placement originated in the 1940s, but only in the past decade have firms embraced it as a key marketing tactic (Karrh, McKee, and Pardun 2003), paying $ 412 million in fees, free products, and promotional support for film product placement in 2004 (Brand Republic 2005).

For firms, product placement is attractive because consumers are growing increasingly resistant to traditional advertising. Film placements expose the product to a captive audience, and they show the product in natural use. Film placements also have a wide message reach, a long message life, and a declining cost per exposure. And in the marketing literature, consensus is building that product placements in films and television can positively affect consumer awareness and attitudes (Baker and Crawford 1995; Brennan and Babin 2004; d'Astous and Chartier 2000; Gupta and Lord 1998; Law and Braun 2000; Russell 2002).

However, film product placement also involves risks. The director has final say over how the product appears in the film, and the placement can be cut during the editing process (Cowlett 2000; McCarthy 1994). The film may be unpopular, limiting the placement's reach. And if the film contains mature themes, firms run the risk that their products may become associated with this content.

[1] Inserting products into scripted entertainment has also been called brand placement or brand integration.

Further, film product placement can be expensive. Firms contributed $ 25 million in fees for the production cost of *Minority Report* (Grossberg 2002). And the cost of a placing a product can run as high as $ 20 million when promotional expenses are included (Linnet and Halliday 2003). These commitments suggest that firms have faith in the value of film product placement despite its expense and risks.

However, it is not at all clear that firms' expenditures on film product placement are justified (Entertainment Marketing Letter 2005). Firms have little evidence to indicate that film product placements are worthwhile (Elliott 2005; Karrh, McKee, and Pardun 2003; Vranica and Steinberg 2004). In particular, there is no evidence to indicate that film product placement is associated with increases in firm cash flows and firm market value.

Further, the literature provides little insight about which placements are worth the most. Past research has extensively focused on understanding the effects of the placement's execution, varying how a placement appears within a program (e.g., Russell 2002). Little research has examined placement outcomes across programs or across products, so firms currently have limited guidance as to which film product placement strategies maximize shareholder value.

To fill these gaps, we conducted an event study to examine the impact of film product placement on firm market value. Increases (decreases) in a firm's stock price in response to an event reflect investors' assessments of whether the event will increase (decrease) the firm's future cash flows (Srinivasan and Bharadwaj 2004), and the abnormal return associated with the event is a measure of the event's effect on firm market value (Brown and Warner 1980). Event studies are commonly used to assess the value of a marketing action when its worth is not known (e.g., Agrawal and Kamakura 1995; Balasubramanian, Mathur, and Thakur 2005; Geyskens, Gielens, and Dekimpe 2002; Houston and Johnson 2000).

This study makes a number of important contributions to theory and practice. We add to theory on product placement by identifying *program*-level and *product*-level factors that affect consumers' response to the placement. Extending theory from psychology and advertising, we explore how tie-in advertising and absorption into the film influence consumers' awareness of the placement, affecting placement value. Extending meaning transfer theory (McCracken 1989), we examine whether violence in the film attenuates the placement's worth. To our knowledge, we also provide the first test of star association and competitive interference on placement value. And for practice, we provide the first evidence that film product placements are rewarded by investors. Further, our cross-sectional analysis gives firms practical guidance for maximizing the shareholder value from their film product placement investments.

We first review the emerging literature on product placement and then discuss our hypotheses. We then outline our sample, variable measurement, and coding procedure. We present the results of the event study, and then we discuss our findings from the cross-sectional analysis. Managerial implications and research limitations are presented at the end.

LITERATURE REVIEW

Product Placement Research

There are three main streams of research on product placement. One stream has focused on content analysis of product placements (e.g., Avery and Ferraro 2000). Another has assessed audience and practitioner attitudes towards the practice using surveys and phenomenological approaches (e.g., DeLorme and Reid 1999; Gould, Gupta, and Grabner-Krauter 2000). And the third stream has investigated product placement's effects on consumer memory, attitudes and purchase intent through experimental and intercept methodologies (e.g., Russell 2002). Since

investor reaction should depend on how placements affect consumers, we focus our attention on the third stream, reviewing theory and findings on how consumers respond to product placement.

How product placements affect consumers. Scholars have proposed a number of mechanisms for consumers' response to product placements, including classical conditioning (e.g., Stuart, Shimp, and Engle 1987), social learning theory (Bandura 1971), and meaning transfer (McCracken 1989). And the extant research on product placement has followed advertising response models (e.g., MacInnis and Jaworski 1989), focusing on how placement *execution* factors affect consumers' ability, motivation, and opportunity to process the placement and the cognitive and affective associations that consumers draw from the placement.

Modality (e.g., audio or visual), plot connection, and prominence are thought to be the execution factors which most affect consumer placement processing (Gupta and Lord 1998; Russell 2002). Consumers' ability and opportunity to attend to a placement increases as the placement becomes more visually prominent in terms of its time and position on screen (Gupta and Lord 1998). And consumers pay more attention to audio placements and high plot connection placements because these placements advance the narrative, providing meaningful information to the audience (Russell 2002).

Product placements are also thought to affect consumers' cognitive associations. The primary explanation for how placements enrich consumers' cognitive associations has been McCracken's (1989) meaning transfer model.

Meaning transfer model. McCracken (1989) suggested that the use of celebrity endorsers is effective because celebrities are endowed with symbolic meaning which is passed on to the product through its association with the celebrity. In much the same way, popular entertainment has rich symbolic meaning which can be transferred to the placed product (Russell 1998, 2002).

Consumers connect the film world to their own, mapping their aspirations to the product placed in the film (DeLorme and Reid 1999; Gould, Gupta, and Grabner-Krauter 2000), influencing consumer attitudes and consumption norms (O'Guinn and Shrum 1997). Adolescents, for example, develop more positive attitudes and behavioral intentions towards cigarettes after seeing actors smoke in a film (Pechmann and Shih 1999). And attitude change is promoted when the individual elements of the placement's execution conspire to provide congruent amounts of meaningful information to the audience (Russell 2002). Product placements are able to shape product attitudes and influence consumer behavior because placements have low persuasive intent (Stern and Russell 2004).

Product placement outcomes. Film and television product placements have consistently been shown to increase consumer awareness (e.g., Brennan and Babin 2004; d'Astous and Chartier 2000; Russell 2002). Gupta and Lord (1998), for instance, found that students exposed to a product placement during a 30 minute film clip had significantly higher recall for the product than a control group. Placements have also been shown to increase product attitudes (d'Astous and Chartier 2000; Russell 2002) and purchase intent (Baker and Crawford 1995; Gould, Gupta, and Grabner-Krauter 2000; Law and Braun 2000).

Further, findings suggest that placements that are more visually prominent on the screen result in greater consumer awareness and recall (d'Astous and Chartier 2000; Gupta and Lord 1998). However, the effects of the other execution factors are less clear. A hierarchy of effects from audio-visual placements to audio-only and then visual-only placements has been proposed, based on dual-coding models of advertising effectiveness (Unnava and Burnkrankt 1991), but evidence for the superior effectiveness of audio-visual and audio placements is equivocal (Brennan and Babin 2004; Gupta and Lord 1998; Law and Braun 2000; Russell 2002).

Placements connected to the plot are thought to be more effective because they attract attention and transfer more meaning, but empirical results are mixed (Law and Braun 2000; Russell 2002). Confounds in the prior research prevent the relative effects of modality, prominence, and plot connection from being readily apparent.

Our review suggests that a number of gaps remain in our understanding of film product placements. It remains unclear whether firms' use of film product placements is justified. We do not know whether firms' investments in film product placement lead to increases in firm market value. Moreover, little is known about how features of the *program* influence the value of a placement. This oversight is surprising, given the substantial research in advertising on how program factors affect ad effectiveness (e.g., Feltham and Arnold 1994; Goldberg and Gorn 1987). And it is also not apparent how firm and product level factors affect placement value. Consequently, firms have little guidance about which placement opportunities to pursue. And because prior research has not simultaneously controlled for all of the different execution dimensions, the value of individual execution factors remains unclear. Therefore, there is a need for research that can discern the value of film product placements for the firm, which simultaneously considers the effects of product, film, and execution factors on placement value. Our event study approach is uniquely suited to filling this gap.

CONCEPTUAL FRAMEWORK

Film Product Placement and Firm Market Value

Film product placement leads to increased firm market value because the placement generates positive consumer outcomes. Substantial evidence shows that film product placements increase brand awareness, attitudes, and purchase intent (e.g., d'Astous and Chartier 2000; Gupta and Lord 1998). And these positive consumer responses lead to increased consumer demand for

the firm's products (Aaker and Day 1974; Gould, Gupta, and Grabner-Krauter 2000), increasing the firm's future cash flows and market value (Srivastava, Shervani, and Fahey 1998).

Moreover, past research has frequently documented a positive relationship between advertising campaigns and firm market value as investors develop expectations of increased cash flows from the campaign (e.g., Agrawal and Kamakura 1995; Chauvin and Hirchey 1993). Like advertising campaigns, film product placements expose the product to a wide audience. Further, film product placements reach a captive audience and they have a declining cost per exposure. Thus, the evidence suggests that film product placement should be associated with increased cash flows and higher firm market value.

H1: Film product placement is positively associated with firm market value

<< Insert Figure 1 here >>

Further, we assert that the value of a film product placement is related to product-level, film-level, and execution-level factors (see Figure 1) that affect how consumers respond to the placement. Befitting our strategic perspective, we focus our hypothesis development on the *product* and *film* factors which influence consumers' responses, as these factors are more within the firm's control. The execution factors are incorporated into our model as covariates (for an excellent review of the execution factors, see Russell 2002). We now turn to the product and film factors affecting consumers' response.

Product and Film Determinants of Placement Value

Tie-in advertising. Tie-in advertising occurs when the firm advertises a product's appearance in a film prior to the film's release. Tie-in advertising is thought to increase placement value because the campaign alerts consumers to the placement (Karrh, McKee, and Pardun 2003), but the effect of tie-in advertising has not been empirically tested.

Tie-in advertising enhances placement value because prior exposure to a concept facilitates subsequent processing. Prior exposure increases the concept's accessibility (e.g., Higgins and King 1981), increasing the likelihood that the concept will be used to comprehend future stimuli (e.g., Wyer and Srull 1981). And prior knowledge facilitates consumer encoding of stimulus information in visually complex environments (Johnson and Russo 1984), suggesting that tie-in advertising increases consumers' ability to notice the placement.

The advertising literature also suggests that prior awareness increases consumer memory for an ad. Jin (2003-4) found that individuals who had prior knowledge of Superbowl advertisements through news stories showed higher recall and recognition for the ads after the game. Thus, when the placement is supported by tie-in advertising, the audience's ability to notice and remember the product placement is higher, so investors should react more positively to the placement, enhancing the placement's impact on firm market value.

H2: The gain in firm market value from the film product placement is higher when the placement is supported by tie-in advertising

Brand strength. Since product placements compete for the consumer's attention with all of the other elements in the film, placements can be difficult to notice. When the placement is a strong brand, the consumer's motivation and ability to process the placement should be higher. In cluttered visual environments, attention focuses on objects with easily-accessible attitudes (Roskos-Ewoldsen and Fazio 1992). Consumers' motivation to attend to an ad is higher for familiar brands (Tellis 1988), and familiar brands are less affected by competitive inference effects (Kent and Allen 1994).

As a result, brand familiarity has been repeatedly associated with higher levels of advertising recall (Hawkins and Hoch 1992). And evidence suggests that brand familiarity increases consumer memory for film product placements as well (Brennan and Babin 2004).

Therefore, since placements for strong, familiar brands are more likely to be noticed and remembered, investors should react more favorably when the placement is a strong brand.

H3: The gain in firm market value from the film product placement is higher when the placement is a strong brand

Audience absorption. We begin our investigation of film factors by reviewing how individuals process films. The psychology literature contends that individuals process the narratives in books and films by becoming immersed in the story (e.g., Dal Cin, Zanna, and Fong 2004; Green and Brock 2002). This immersion in the story has been called absorption, engagement, or transportation (Gerrig 1993; Green and Brock 2000). When the audience is absorbed in the film, motivation to attend to what is shown on screen is high, so one might expect that product placements in absorbing films are more valuable. However, we contend that film absorption has the opposite effect. We expect that audience absorption diminishes the value of the product placement because, when absorbed, individuals "lose themselves" in the story.

Absorption is a convergent process where attention is focused on understanding the events in the narrative, leaving little motivation and ability for other tasks (Green and Brock 2002). As individuals become more immersed, they are less able to identify aspects incidental to the story (Green and Brock 2000). Because absorbed individuals want to remain engaged with the narrative, they have little motivation and / or ability to focus on the placed product, limiting their awareness of the placements.

The advertising literature has characterized absorption into the program as program involvement. Most of the research has examined the effects of program involvement in situations, such as radio and television commercials, where the program is *interrupted* to present the ad (e.g., Lord and Burnkrant 1993). In film product placements, however, the entertaining content and the advertising are presented *without interruption.* Results suggest that program

involvement reduces memory for the ad when the entertaining content and the advertisement are presented concurrently. Individuals reading a magazine article had lower memory for embedded print ads when the article was interesting, enjoyable, and absorbing (Norris and Colman 1992). Pham (1992) had subjects watch a soccer match in which billboards appeared during the course of the game. As involvement with the match increased from moderate to high levels, recognition of the embedded billboards decreased. Thus absorption in the film should impede consumers' awareness of product placements, making placements in absorbing films less valuable.

H4: The gain in firm market value from the film product placement is reduced when the audience is absorbed into the film

Critical acclaim. *Critical acclaim* refers to the extent to which a film is critically praised. One might expect that investors react more positively to placements in critically acclaimed films because involvement with the praised project reflects favorably on the firm.

However, we argue that product placements in critically praised films are less valuable. Product placements are *commercial* messages (DeLorme and Reid 1999) that *disrupt* the audience's experience of the film. Since critically acclaimed films have greater integrity and coherence, it is more upsetting to see a product placement in a critically acclaimed film than an average film. And surveys of movie-goers support our view. Audiences accept placements in 'commercial' films (Karrh 1998), but audiences respond to placements in critically-praised films with anger and annoyance (DeLorme and Reid 1999). These negative responses can transfer over to the placed product, causing consumers to lower their evaluations of products placed in critically-praised films, attenuating the value of these placements.

We believe that consumers respond negatively to product placements in critically acclaimed films because these placements are *incongruent*. Product placements are commercial messages, incongruous with the acclaimed film's artistry. And because individuals have a natural

tendency to prefer aspects which conform to expectations, incongruence leads to increased elaboration and lower evaluations (Lee and Mason 1999; Meyers-Levy and Tybout 1989), decreasing brand attitudes and purchase intent (Feltham and Arnold 1994; Kamins, Marks, and Skinner 1991). Thus, since consumers react negatively to placements in critically acclaimed films, investors should consider these placements to be less valuable[2].

H5: The gain in firm market value from the film product placement is reduced when the placement occurs in a critically acclaimed film

Association with violence. We extend the meaning transfer model (McCracken 1989) to the associations that consumers have about the film's violence. Despite the extensive violence in popular entertainment, meaning transfer due to violence has received little attention in the extant product placement research.

A product placement functions as an endorsement (Russell 1998), so a film product placement suggests that the firm approves of the film's subject matter. Consumers reason that if the firm disapproved of the film's content, the firm would not have placed its products in the film. Airlines, for instance, turn down films which depict flying in a negative manner.

Thus we expect that product placements in violent films send the message that the firm does not object to violence. The audience, as a result, is likely to transfer their negative associations with film's subject matter onto the placed product, lowering the product's image[3]. Thus, when the placement occurs in a violent film[4], investors should react less positively, attenuating the placement's value.

H6: The gain in firm market value from the film product placement is reduced when the film is violent

[2] Since all placements are commercial message, we feel that this effect should occur regardless of the product.
[3] Whether some products are immune to the negative transfer is explored in our results section.
[4] We believe that the film, not the scene, is the proper unit of the analysis because the placement contributes to the making of the *film*. All placements were complicit in getting the film made, so consumers should map their negative associations about the film's violence onto all of the film's placements. We explore this issue in the results section.

METHOD

Event Study Methodology

The event study methodology is used to assess impact of unexpected information on the firm's stock price. Financial theory asserts that a firm's stock price reflects the present value of the market's expectations about the firm's future cash flows (Rappaport 1997). The efficient market hypothesis asserts that a stock price reflects all public information about the firm, so only unexpected information can change the price of a stock (Fama et al. 1969). Thus, if the new information indicates that the firm will garner higher (lower) future cash flows, then the firm's stock price rises (drops) in reaction to the new information. The stock's abnormal return, the difference between the expected "normal" and the actual returns, provides an unbiased estimate of the economic value of the event (Brown and Warner 1985).

To generate the expected return for an individual stock i over the event window, we employed the market model:

(1) $$R_{it} = a_i + b_i R_{mt} + e_{it} .$$

The day-t rate of return for stock i (R_{it}) is a function of the rate of return of the market portfolio for day-t adjusted for risk ($ß_i R_{mt}$), an intercept (a_i), and a residual term (e_{it}). The abnormal, or excess, return for the stock i on day-t, (AR_{it}), is the difference between the stock's actual return and the expected "normal" return:

(2) $$AR_{it} = R_{it} - (\hat{a}_i + \hat{b}_i R_{mt})$$

where $\hat{a}_i$ and $\hat{b}_i$ are ordinary least squares estimates of a_i and $ß_i$. The cumulative abnormal return for firm i (CAR_i) for a period of time (T_1, T_2) is calculated by summing the abnormal returns for firm i from day T_1 to day T_2. For the sample, the cumulative average abnormal return over the

T_1, T_2 period ($CAAR_{T1,T2}$) is the sum of the individual firm CAR_i divided by the number of firms in the sample N:

$$CAAR_{T_1,T_2} = \frac{1}{N}\sum_{i=1}^{N}\sum_{t=T_1}^{T_2} AR_{it}\,. \tag{3}$$

Brown and Warner (1980) recommended using the time-series standard deviation test ("the crude dependence adjustment") when events are clustered on a few dates. Using a single variance estimate for the portfolio, it controls for any cross-sectional dependence due to the clustered event dates. The test statistic is the cumulative average abnormal return ($CAAR_{T1,T2}$) divided by its estimated standard deviation:

$$t = \frac{CAAR_t}{\hat{s}_{AAR}\sqrt{(T_2 - T_1 + 1)}}\,. \tag{4}$$

The variance for the average abnormal return (AAR_t), $\hat{s}^2_{AAR}$, is estimated by:

$$\hat{s}^2_{AAR} = \frac{\sum_{T_b}^{T_e}(AAR_t - \overline{AAR_t})^2}{L-2} \tag{5}$$

where L is the length of the estimation period, T_e is the date that the estimation period ends, T_b is the date where it begins, and $\overline{AAR_t}$ is an estimate of the average abnormal return during the estimation period.

DATA

Sample. Because Hollywood studios release around 200 films each year (Menand 2005), we limited our analysis to the most popular films, the 31 movies in 2002 that made $20 million in the U.S. during their first weekend (Boxofficemojo.com 2004). Seven movies had no product placements, so our final sample included 24 films.

Variable Operationalization

Following Russell (2002), a v*isual placement* occurred if the product's name or logo was legibly shown on the screen, and an *audio placement* occurred if the product was mentioned.

Independent variables. We operationalized *tie-in advertising* by whether the firm supported its placement with an advertising campaign, identified through a Lexis-Nexis search. *Brand strength* was measured as a categorical variable indicating whether the placement was for one of *BusinessWeek's* top 100 global brands in 2002. We measured *audience absorption* through the grade from CinemaScore®, a market research firm that interviews opening-night movie audiences about how much they enjoyed the film[5]. *Critical acclaim* was measured by decimal equivalent of *Entertainment Weekly's* average critic grade for the film. We captured *association with violence* by whether the film was rated R for violence by the film ratings board, the Motion Picture Association of America.

Firm level controls. We controlled for the number of brands because a firm is likely to obtain greater returns as more of its products receive exposure. Per standard practice, we included the market value of the firm on the event day as a firm-level control variable. Because the abnormal returns are expressed in percent, the placement may make a proportionally lesser impact for high market value firms. Market value was determined by multiplying the closing stock price on the event day by the number of shares outstanding.

Film level controls. We controlled for the number of consumers exposed to the placement by using the movie's opening three-day gross as a proxy for audience size[6]. Since

[5] Though the film's CinemaScore® value would not be available until after the market's close on the event day, investors can make a good estimate of audience absorption from film screenings during the event window.
[6] Investors can make good estimates for audience size during the event window due to the Hollywood Stock Exchange prediction market and the box office forecast game on boxofficemojo.com (Lippman 2005b).

competing advertisements have a deleterious effect on an ad's effectiveness (e.g., Burke and Srull 1988), we included the number of placements in the film for other firms as a control.

Execution-level covariates. We controlled for the idiosyncrasies in placement execution by including measures for the execution factors shown to affect consumer placement processing in prior research. We controlled for modality by including the number of visual, audio, and audio-visual placements for the firm in the film. Since celebrities increase attention, recall, and purchase intent (e.g., Kahle and Homer 1985), we controlled for star association. A star is an actor who is credited prior to the film's title (Lippman 2005a). A visual placement was *associated with a star* if the product was touched, held, or consumed by the star (Avery and Ferraro 2000), and association with a star was captured by the time of the on-screen association and by the number of product mentions said by stars. We also controlled for the plot connection, whether the placement was instrumental in advancing the plot or increasing the audience's understanding of a main character (Russell 2002). To control for the placement's visual prominence (Gupta and Lord 1998), we included the placement's time on screen (in seconds), the time in the background, and the time that the product was the only placement on screen. Finally, we included the valence of the audio mention to control for differences in endorsement. The audio placement was positive (negative) if it was a favorable (critical) comment about the product. Comments that were neither positive nor negative were considered neutral.

Data Collection Procedure

Coding. The first author and a graduate student independently coded the 24 films for characteristics of the placement's execution. Only placements for products for firms traded on the major U.S. stock exchanges were recorded. We considered a placement to be the appearance of a product during a scene. If a product appeared multiple times in one scene, this was recorded

as a single placement (Galician and Bourdeau 2004). When a product was placed into multiple scenes in a film, each placement was recorded separately.

Reliability. The coders identified a total of 283 visual and audio placements of products of companies publicly listed in the U.S., with an agreement rate of 81%. Agreement for the execution level variables was greater than 80%, ranging from 80% for background versus foreground to 96% for visual association with star. All discrepant codings were resolved through discussion. These 283 visual and audio placements represented 177 events because some firms had multiple placements in a film. Aggregated totals of a firm's placements in a film were used in the cross-sectional analysis.

ANALYSIS AND RESULTS

Event Analysis

The event date was the day that the film opened in theaters[7]. Earnings information is a strong signal for investors, so we removed firms that had earnings announcements near the event date to increase the likelihood that the stock price reaction was related to the film product placement. A search of Factiva and Lexis-Nexis databases revealed that 15 firms issued positive earnings information and 5 firms issued negative earnings information during a period extending from 4 days before to 4 days after the film's opening. Eliminating these confounding events, we were left with 157 firms that had a product appear in a film (see Table 1).

<<< Insert Table 1 here >>>

[7] We recognize that product placements are sometimes announced in the trade press or in press releases before the film opens in theaters. We do not consider these pre-announcements as the event date for a few reasons. First, firms have announced placements only to find that the placement was left out of the final film (Cowlett 2000; McCarthy 1994). This unfortunate situation occurs because the director, not the firm, retains the decision on whether a product appears in a film. Second, substantial theory and evidence exists to suggest that the value of the placement should be contingent on film and execution factors which cannot be definitively known until the film is finished and shown. As a result, we argue that investors are unable to judge the value of the placement without knowing how the product appears in the film. In the results section, we confirm that the investor reaction to product placements does not occur until the film is completed and shown in theaters.

The final print arrives in theaters two days before the release date (Thomas 1998), and prior to release, the film is screened for critics and promotional audiences (LaSalle 1996)[8]. Thus we used [-2, 0] as the event window to allow for information leakage (McWilliams and Siegel 1997). Daily stock returns were gathered from the University of Chicago's Center for Research in Security Prices (CRSP). Following recommended guidelines (Cowen 2003), parameters of the market model were estimated for each firm over a 255 trading day estimation window, ending 46 days prior to the event, using the CRSP equal-weighted index to model the market portfolio.

Event Results: The Impact of Film Product Placement on Firm Market Value

Our null hypothesis is that the cumulative average abnormal return [CAAR] associated with the film product placement is zero. The sample cumulative average abnormal returns and test statistics are presented in Table 2.

<<< Insert Table 2 here >>>

We documented a significant average stock price increase of 0.90% for the [-2, 0] event window, supporting H_1. The significant associated binomial proportionality test statistic (Z) provides additional support for the robustness of the positive abnormal return from the product placement (90 of 157 abnormal returns are positive; $Z = 2.08$, $p < .05$)[9]. On a per day basis, this abnormal return is similar to the 0.54% two-day CAAR found for celebrity endorsements (Agrawal and Kamakura 1995). Thus, film product placements are events which are significantly rewarded by investors.

[8] Though not all investors will be aware of the product placements in these initial screenings, the market can become aware of this information because markets can aggregate information in a rational manner (Ball 1995).

[9] Sensitivity analysis indicated that our positive CAAR was robust with respect to extreme values, different estimation periods, and for an event window including the Monday after the release. Results were also similar when Scholes-Williams betas were used. These results have been omitted due to space limitations, and they are available from the first author by request.

We note that event studies in marketing traditionally use the *press* announcement as the event. We believe, however, that press announcements of film product placements do not provide enough information for investors to gauge the value of the placement, so there is no investor reaction to these announcements. Unlike other marketing events, investors cannot be certain that the placement will occur because the product may be cut out of the film. Further, investors cannot gauge how consumers will respond to the placement until they know how the product appears in the film – information that is not known until the film is shown. To test this view, we examined whether investors react to press announcements of film product placements that appear *prior to* the film's release. A Factiva database search identified eleven press announcements of a product placement before the [-2, 0] event window. We found no significant stock price reaction to these press announcements[10], supporting our view that the press release does not provide investors with adequate information. The appearance of the product in a released film is the event to which investors can respond.

Cross-sectional Regression Results

<<< Insert Table 3 here >>>

We tested our hypotheses by regressing the standardized abnormal return from the event window [-2, 0] on our independent variables and covariates. Following Agrawal and Kamakura (1995), we used the firm's standardized abnormal return as the dependent variable to reduce the problem of heteroskedasticity. Results from the cross-sectional analysis are presented in Table 3.

[10] We used a 255 day estimation window ending 46 days before the event, the date of the press announcement. Because these placements were announced through press releases or trade reports, leakage was less likely so we examined the [0, 1], [0, 0], and [-1, 0] event windows. No significant results were found for any of these windows: $CAAR_{[-1,0]}$ = 0.88%, t-statistic = .71; $AR_{[0,0]}$ = 0.18%, t-statistic = .21; $CAAR_{[0, 1]}$ = -0.88%, t-statistic = .71.

Results from the firm, movie, and execution covariates. The covariate model was significant ($F_{17,139} = 2.46$; $p < .01$)[11]. The firm's stock market return was unrelated to the firm's market value, but it was positively associated with the number of the firm's brands that appeared in the film ($b = 2.53$, $p < .01$). And stock market return was positively associated with audience size, as measured by the dollar value of the film's opening weekend ($b = 0.34$, $p < .01$). The number of brands and audience size remained significant when the independent variables were incorporated into the model.

None of the execution variables affecting consumer response to the placement was found to have a significant effect on placement value. We found that the firm's stock market return is unaffected by placement modality or by star association. Time on screen had a positive relationship with stock market return that was positive, but not significant. The firm's stock market return did not depend on the visual placement's plot connection, whether the placement was in the background, or whether other products were visible on the screen. The value of the audio placements was found to be unrelated to valence and plot connection. We present possible reasons for why we did not find support for these relationships in our discussion.

Results from the independent variables. The full model was significant ($F_{22,134} = 4.14$; $p < .01$), with a higher adjusted R^2. The superiority of the full model is further supported by its lower Bayesian information criteria value ($BIC_{\text{full model}} = 1420.27$; $BIC_{\text{covariates only}} = 1447.22$).

We find strong support for the idea that the value of the placement is contingent on the firm and film factors that affect how consumers process placements. A tie-in advertising campaign had the expected positive effect ($b = 6.51$, $p < .01$) on the firm's return from the product placement, supporting H_2. The coefficient for brand strength was positive, but not

[11] We also tested for the film's MPAA rating (e.g., R, PG-13, PG, G) as a control variable. Rating had no significant influence on the value of the product placement, so we did not include rating due to space limitations. Regression results were similar with and without film rating.

significant, so H_3 was not supported[12],[13]. The value of the product placement was reduced when the audience was absorbed into the film ($b = -3.52$, $p < .01$), supporting H_4. And our results support H_5. The film product placement's effect on firm market value was reduced when the film was critically acclaimed ($b = -0.87$, $p < .05$). Finally, we found that the value of the film product placement was also significantly reduced when the placement occurred in violent films ($b = -2.49$, $p < .01$), supporting H_6[14],[15].

DICUSSION

We documented a CAAR of 0.90% associated with film product placements over the film's opening, indicating that film product placements are associated with significant increases in firm market value. Our results suggest that investors consider film product placement to be a wise marketing practice.

The cross-sectional analysis suggested that firm and film factors explain a significant amount of the variance in investor reaction. Firms that supported their placements with tie-in advertising campaigns and firms that placed more brands in the film were rewarded with a greater increase in firm market value.

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[12] A measure of brand strength using the strong brands for year 2001 also failed to show significance.

[13] We also tested for brand strength by whether the firm was one of *Brandweek's* or *Advertising Age's* top hundred in advertising spending during the years of 2001 or 2002. Regressions using these alternative measures also failed to show a significant effect for brand strength.

[14] We also examined whether this relationship varied by the type of product. Most of the placements in violent, R-rated films were for large, mass market firms that should be expected to be negatively affected by their association with violence (e.g., Heinz, Krispy Kreme, Starwood, Anheuser-Busch). However, one expects that Ducati, a maker of high-performance motorcycles, would not be so negatively affected. Most motorcycle buyers are men and men can be expected to be less concerned about the use of violence. Further, violence associations are consistent with the masculinity and rebellion associated with motorcycles. We documented that Ducati had a positive CAAR of 1.11 percent over the event window, suggesting that the film's violence may have in fact contributed to the shareholder value creation of Ducati's placement. An interaction term for Ducati and R-rated violence had a positive coefficient, but it was not significant ($b = 1.45$, $p > .10$). Further, we examined whether strong brands are more affected by their association with film violence. The coefficient for the interaction of brand strength and film violence was negative, but not significant ($b = -.09$, $p > .10$).

[15] We also considered whether these effects would be stronger when the placement occurred during a violent scene. An interaction term for whether the placement occurred within a violent scene had a negative coefficient, but it was not significant ($b = -.95$, $p > .10$).

Perhaps the most interesting result was the extent to which the value of the placement depended on features of the film. The value of the film product placement was enhanced when more consumers saw the film. However, the positive association between film product placement and firm market value was weakened when audience absorption reduced the likelihood that consumers would notice the placement. Placements in critically praised films and in films containing violent subject matter were also deemed to be worth less.

The execution-level variables fail to emerge as a significant influence on firm market value, suggesting that investors believe that the effects due to the placement's execution are subordinate to the effects of the program. The prior studies (e.g., Gupta and Lord 1998; Russell 2002) which found support for the role of execution factors such as modality, plot connection, and visual prominence did not factor in the audiences' processing of the *program*. Our results indicate that since audience attention is primarily focused on the film, film factors disproportionately drive placement processing and placement value.

Nevertheless, we were surprised that no effect emerged for association with a star. One reason could be that our definition of star was too expansive. For instance, the actors whose names appeared above the title in *Barbershop* and *Scooby Doo* are not in the same league as Tom Cruise or Will Smith. However, additional analysis did not indicate any benefit from association with the largest stars[16]. Alternatively, star association may only be beneficial when the audience is *connected* to the character (Russell, Norman, and Heckler 2004). Or, as we

[16] In a separate analysis, we used *Entertainment Weekly's* 2002 list of the 50 most powerful entertainers as a proxy for a major star. Ten of our stars made this list (e.g., Tom Cruise, Denzel Washington, Will Smith, Adam Sandler, Reese Witherspoon). However, even with this more restrictive definition of star, we found no significant effects for star association.

discuss later, the lack of result for star could also be driven by a mismatch between the role, the star, and the product[17].

Finally, this research is also important because it adds to the literature linking marketing strategy and shareholder value (e.g., Srivastava, Shervani, and Fahey 1998). This study provides additional evidence for how a marketing action can directly contribute to the market value of the firm. More importantly, it reinforces the idea that shareholders monitor and react to strategic marketing actions.

LIMITATIONS AND IMPLICATIONS

Limitations and Implications for Future Research. Our conclusions are subject to a number of limitations which should be addressed in future research. We limited our examination of film product placements to the movies with the largest opening audiences. Our significant result for movie opening suggests that the benefits of film product placement may not extend to films with smaller audiences. However, the soaring sales of pinot noir due to the art-house film *Sideways* (Verrinder 2005) suggests that placements in niche films may be valuable as well.

Moreover, investor assessment of the placement's value may depend on film-level and execution-level factors not accounted for in our model. For example, the cultural meanings that audiences have for certain movies and characters, such as James Bond, may make placements in those films worth more. Scholars have suggested that the value of the endorsement depends on the match between the celebrity and the product (Kahle and Homer 1985; McCracken 1989). However, the distinction between the star as a celebrity and star as a character in the film needs to be considered as well. For example, if there is a benefit from a placement with Austin Powers, is the benefit due to Austin Powers' persona or due to Mike Myers' celebrity? Further, what

[17] We also considered whether brand strength could account for our non-significant result for star association. Since strong brands have well established associations, the benefit of star association may only occur for weak brands. However, no interaction between brand strength and association with star was found.

happens when a celebrity plays a nefarious character, such as Tom Cruise in *Collateral*? Future research is needed to disentangle the effects of celebrity associations and in-role character associations on how consumers react to the placement.

We found evidence consistent with negative transfer effects from the violent content. Another explanation for the negative relationship can be found in the literature on corporate social responsibility, which argues that consumer attitudes and choices are affected by the perceived social responsibility of the firm (e.g., Brown and Dacin 1997). Since media violence has been shown to lead to real-world violence (Felson 1996), program choice might involve issues of social responsibility, suggesting that the observed negative effect for violent content could be due in part to the irresponsibility of supporting a violent film. Additional research is needed to determine if there are other content taboos that weaken the placement's value.

We also did not consider whether the effectiveness of product placement varies by product category. Logic suggests that tobacco firms may disproportionately benefit from product placement because they cannot advertise on television. Additional analysis revealed an extremely positive investor response to cigarette placements[18], suggesting that investors consider film product placement to be an extremely wise practice for tobacco firms. This result raises public policy questions about the appropriateness of allowing cigarette film product placements.

Finally, we only examined the effectiveness of product placement in movies. Given the increasing use of product placement in other media (i.e., television, music, books, magazines, videogames, and Broadway shows) research should assess the shareholder wealth effects of product placement in these contexts as well.

Managerial Implications. Because investing in a film product placement has heretofore involved a leap of faith (Wasserman 2005), our findings have significant implications for

[18] The coefficient for a cigarette placement was positive and significant ($b_{tobacco\ firm} = 3.21$, $p = .05$) in the full model.

practice. For firms, this research provides the first independent, objective evidence that investors consider film product placement to be a wise marketing practice. Further, the results from the regression analysis provide *new* guidance for firms as they consider product placement opportunities, encouraging firms to consider audience absorption and the film's artistry in their placement decisions. Firms can use cues such as the script, the director, and the studio to make informed judgments about how the film will perform on these dimensions. In addition, firms should be heartened by the fact that investor reaction does not seem to depend on any of the execution-level variables over which they have limited control.

In addition, our results offer the following guidelines for firms, studios, and product placement agencies:

- *Firms believe that film product placements gain the attention of consumers who are difficult to reach through traditional advertising (Elliott 2005; Johannes 2005). Does investor reaction confirm this belief?*

Our findings suggest that investors also believe that film product placements are an effective way to increase product awareness. Investors react less enthusiastically when factors (e.g., audience size or audience absorption) limit the placement's ability to capture consumer *attention*. We note that the investor reaction to film violence suggests that the *meanings* that consumers take away from the placement significantly affect placement worth as well.

- *What implications does this research have for film product placement pricing?*

Studios price each film product placement on a case-by-case basis based on what firms are willing to pay (Schiller 2004). Our results offer guidelines to studios in setting their product placement rates by suggesting the benefits that placements can have for firms. Though many firms consider the cost of placements in top movies to be unreasonably high (Entertainment Marketing Letter 2005), our results suggest that these fees are often money well spent.

Further, our results suggest that firm beliefs about the most valuable placements may need to be reconsidered. Firms believe that it is important for the product to be seamlessly integrated into the plot and for it to be associated with a star (Johannes 2005; Karrh, McKee, and Pardun 2003). Our results, however, do not suggest that there is a benefit to high-plot connection or star association.

- *How should the value of a product placement be measured?*

Though there is no one accepted measure for valuing product placements (Shiller 2004; Vranica and Steinberg 2004), the current services compare the film placement's exposure to relative to cost of an equivalent 30-second television commercial (Shiller 2005). We feel that the event study approach complements these other efforts. The event study easily captures specific firm and product-level effects, such as the unique value of film product placements for tobacco firms. Further, the event study enables us to capture the value in situations, such as James Bond's car, where the value likely far exceeds the costs of an equivalent television exposure.

- *How can this research improve other product placement valuation methods?*

The current models account for the differences in placements due to the placement's modality, prominence (i.e., time on screen, background-foreground), plot connection, and star association (Shiller 2004). What these models fail to capture, however, is how the audience's response to the program affects placement value (Learmouth 2005). Our research provides the first evidence that how the audience responds to the film significantly influences placement value.

Table 1
Film Product Placement Events

Movie	Firm* (Product**)
8 Mile	Energizer, Heinz, Limited Brands (Victoria's Secret)
Austin Powers in Goldmember	Apple, Ebay, Ford (Jaguar), FedEx, GM (Cadillac), Coca-Cola, Mandalay Bay (Circus Circus), Pepsi, Pfizer (Viagra), Playboy
Barbershop	Darden (Red Lobster), Ford (Range Rover), Gillette, GM (Cadillac), IHOP, Kraft (Planters, Grape Nuts), Kimberley-Clark (Huggies), Pepsi, Pfizer (Viagra), Toyota (Camry), Tribune (Chicago Tribune),
Blade II	Ducati, Krispy Kreme, Olin (Winchester), TDK
Catch Me If You Can	American Airlines, Continental, GM (Cadillac), JP Morgan Chase (Chase Manhattan), Coca-Cola, Sara Lee, United Airlines, Unilever (Good Humor)
Die Another Day	British Airways, Ford (Aston Martin, Jaguar), Phillips
Insomnia	Tribune (Los Angeles Times)
Jackass: The Movie	Danone (Evian), Homestore, Matsushita Electric (Panasonic), Pioneer, Vans
John Q.	Coca-Cola, DaimlerChrysler (Mercedes), Motorola, AB Volvo (Mack)
Men in Black II	Coca-Cola, DaimlerChrysler (Mercedes), Ebay, Gemstar (TV Guide), Hasbro (Twister), Honeywell, Limited Brands (Victoria's Secret), Sony, Pepsi, Sprint
Minority Report	American Express, Cendant (Century 21), Diageo (Guinness), Gannett (USAToday), Gap, Luxottica (Bvlgari, Revo), Nokia, Pepsi (Pepsi, Aquafina), Reebok, RadioShack, Toyota (Lexus), Unilever (Ben and Jerry's)
Mr. Deeds	Anheuser-Busch (Budweiser), Cendant (Jackson Hewitt), Cadbury Schweppes (Dr. Pepper), DaimlerChrysler (Mercedes), Disney, Kodak, GE (NBC), GM (Corvette), Hershey (Bubble Yum), Kellogg (Special K), Kraft (Cocoa Pebbles), Krispy Kreme, Matsushita Electric (Panasonic), News Corp (NY Post), Pepsi, Procter & Gamble (Old Spice), Sony, Wendy's, Wrigley
Panic Room	Anheuser-Busch (Budweiser), Danone (Evian), Energizer, General Electric (NBC), Matsushita Electric (Panasonic), Nokia, Procter & Gamble (Nyquil), Sony
Red Dragon	FedEx, Starwood (Sheraton)
Scooby-Doo	Coca-Cola, GE (Telemundo), Worldwide Restaurant Concepts (Sizzler)
Signs	Coca-Cola, Johnson & Johnson (Tylenol)
Spider-Man	BellSouth (Cingular), Cadbury Schweppes (Dr. Pepper), Ford (Jaguar), Federated Department (Macy's), GM (Cadillac), Liz Claiborne, Palm, Prudential, SBC (Cingular), Sara Lee (Chock Full of Nuts), Sony, TDK, United Airlines, VF (Jansport)
Sweet Home Alabama	Anheuser-Busch (Bud Light), Capitol One, Disney (W Magazine), Fairmont (Plaza), Coca-Cola, Neiman Marcus (Bergdorf), News Corp (NY Post), Tiffany, Winn-Dixie
The Bourne Identity	British Petroleum, Estee Lauder, Matsushita Electric (Panasonic), Motorola
The Santa Clause 2	Ebay, Ford (Mustang), McDonald's, Pepsi
The Sum of All Fears	Brown & Williamson (Kool), Anheuser-Busch (Budweiser), Hilton, IBM, Phillip Morris (Marlboro), Reebok, RJR (Camel), Time Warner (CNN)
The Time Machine	Federated Department (Macy's), Tiffany
XXX	Kodak, Fiat (Ferrari), GM (Corvette), IBM, Motorola, Pearson (Financial Times), 7-Eleven, Sony, Vans
We Were Soldiers	Amerco (U-Haul)

* Firms with placements that had earnings announcements are not listed.
**If different from name of firm. Some firms had additional products in the film.

Table 2
Cumulative Abnormal Returns for Film Product Placements

Event Window	Cumulative Abnormal Return (%)	t-statistic	Sample Size (n)	Number with Positive Abnormal Returns	Z-statistic
-3, -3	-0.03	-0.10	157	79	0.32
-2, 0	0.90	2.03*	157	90	2.08*
1, 1	0.05	0.21	157	80	0.48

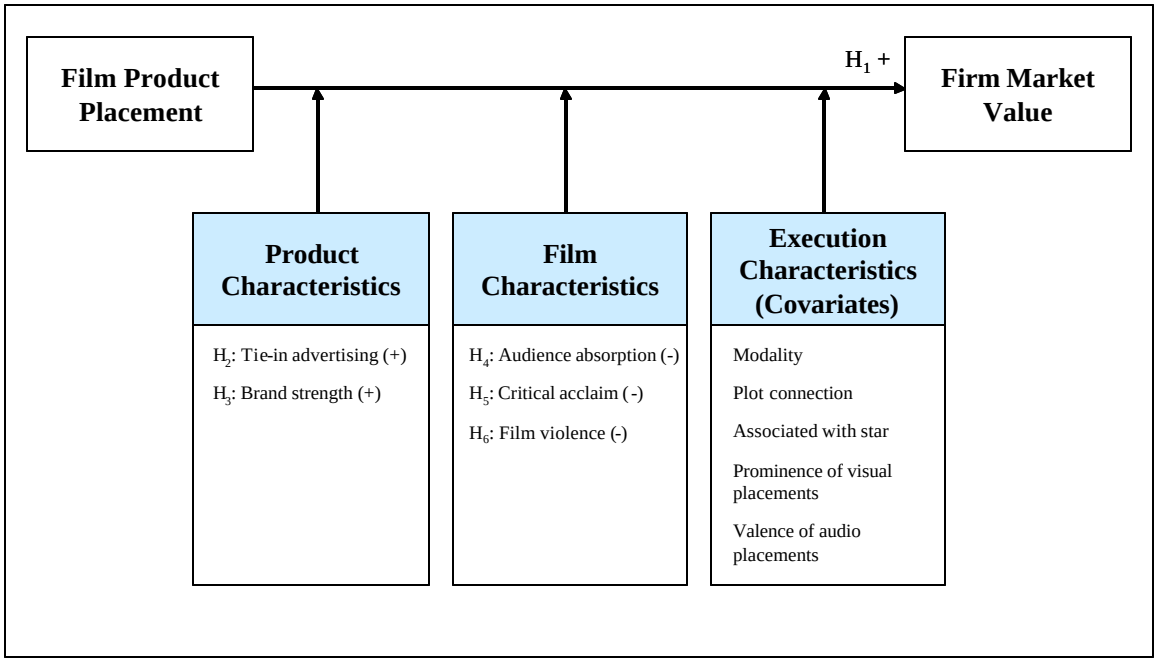
* $p < .05$.

Table 3
Cross-Sectional Regression Results

Dependent Variable: Mean Cumulative Abnormal Return in Percent (over days t = -2 to 0)		
Independent Variable	**Parameter Estimates: Covariates and Controls**	**Parameter Estimates: Complete Model**
Intercept	-3.68**	13.54**
Product Characteristics		
H_2: Tie-in advertising (+)		6.51**
H_3: Brand **strength (-)**		0.24
Film Characteristics		
H_4: Audience absorption (-)		-3.52**
H_5: Critical acclaim (-)		-0.87*
H_6: Association with violence (-)		-2.49**
Execution Characteristics (Covariates)		
Modality		
# of visual placements for firm in film	-0.31	-0.14
# of audio placements for firm in film	0.76	0.34
# of audio-visual placements for firm in film	0.89	0.28
Visual placement execution:		
Associated with star	-0.00	-0.00
Plot connection (low)	0.01	0.00
Time on screen	0.03	0.02
In background	-0.02	-0.05
No other products visible	0.11	-0.12
Audio placement execution:		
Said by star	0.75	1.04
Plot connection (low)	0.05	0.31
Positive valence	-1.21	-1.14
Neutral valence	-0.80	-0.88
Negative valence	-1.89	-1.65
Firm and Film Controls		
Firm-level		
Market value (in billions)	0.01	0.00
# of brands	2.53**	1.56*
Film-level		
Opening (in tens of millions $)	0.34**	0.23*
Number of other placements in film	-0.02	-0.06
Observations	157	157
R^2	0.23	0.40
Adjusted R^2	0.14	0.31
F-value	2.46	4.14
F-probability	< 0.01	< 0.01
Bayesian information criteria (BIC)	1447.22	1420.27

** p < .01
* p < .05.

Figure 1
A Conceptual Model for Film Product Placement's Impact on Firm Market Value



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