ORIGINAL EMPIRICAL RESEARCH

The importance of reciprocal spillover effects for the valuation of bestseller brands: introducing and testing a contingency model

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Abstract The valuation of extension rights is critical for entertainment brands such as bestseller books. Building on brand extension research, we argue that accounting for the reciprocal spillover effect (i.e., the influence of an extension product on a parent brand) is important for determining the value of extension rights. We develop a contingency model of the reciprocal spillover effect for category extensions of entertainment products that are characterized by short life cycles and satiation effects. In the discussion of moderating factors, we pay particular attention to the new concept of backward integration, which accounts for the reaction of a parent to the introduction of an extension. Using data from all 446 literature adaptations produced for the big screen and theatrically released in North American theaters between 1998 and 2006, we provide evidence that extension success and marketing support impact the sales of the parent book and for several postulated moderating effects, including those of backward integration. Through simulation analyses, we demonstrate how considering the reciprocal effect in the managerial decision-making process can help entertainment managers to avoid biased estimations of category extension rights.

> *Nothing sells books more than a movie (Minzesheimer 2004).*

Category extensions account for a large percentage of successful products across many industries, including entertainment products. Measuring the value of category extensions is of key importance for licensing extension rights to other firms, a strategy that is widely applied across many industries (e.g., Hugo Boss cell phone license acquired by Samsung; Lacoste Fragrance license acquired by Procter & Gamble; *The Great Gatsby* jewelry collection sold by Tiffany & Co.). However, the high variance in prices charged for category extension rights shows that determining their monetary value is a challenging task for managers, whose perceptions may differ substantially. For example, in the case of successful book brands that have been extended into motion pictures, these prices range from $0.6 million (which 20th Century Fox paid for *The Devil Wears Prada*; Chaudhuri 2006) to $10 million (Constantin Film for *The Perfume*; Jenny 2006).

Although the entertainment industry could benefit from a theory-guided approach to valuing the rights for individual extension products, existing research provides only limited insights (for exceptions, see Hennig-Thurau et al. 2009 and Lane and Jacobson 1995). Building on extant brand extension research, this study offers guidance to managers of entertainment products such as books on how to valuate the category extension rights for an individual product while acknowledging the important roles of both the reciprocal spillover effect (i.e., the influence of an extension product on its parent brand; e.g., Balachander and Ghose 2003) and the forward spillover effect (i.e., the influence of a parent brand on its extension product). The reciprocal spillover effect adds complexity to the valuation

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of category extensions because a rights owner may benefit from additional sales of the parent brand in addition to receiving the fee for the extension right. Thus, selling a right for a lower price can be reasonable if the extension more than compensates for this by stimulating higher sales of the parent brand, whereas disregarding feedback effects during negotiation processes for extension rights could lead to financial misallocations and over- or undervaluation of extension rights.

Our approach combines existing research on the forward spillover effect for entertainment brands (Joshi and Mao 2012) with a new contingency model of the reciprocal spillover effect, placing special emphasis on the forces that moderate this effect. Specifically, as part of a systematic investigation of potential moderators, we introduce backward integration as a new moderator in brand extension research. Backward integration accounts for the reaction of the parent brand company to the introduction of the extension. For example, publishers issue a "tie-in" version of the parent brand book at the time of a movie adaptation release, making direct links to the movie adaptation on its cover. This moderator is of special importance in the context of licensed category extensions, as it benefits the owner of the parent brand even though the power over the extension product has shifted to the buyer. Along with backward integration, we also analyze the moderating impacts of parent brand characteristics and fit, which have received only limited attention in the context of behavioral reciprocal spillover effects.

We empirically test our contingency model using a dataset of 446 motion pictures that were adapted from book brands. By studying bestseller adaptations, we contribute to a relatively new stream of research that has investigated extensions in the context of entertainment products, which are characterized by short life cycles and satiation effects (e.g., Luan and Sudhir 2010; Sood and Drèze 2006). We find support for most of the postulated effects, including the moderating role of backward integration. We also combine the contingency model of the reciprocal spillover effect with previous insights on the forward spillover effect for entertainment products (Joshi and Mao 2012) and develop an approach that determines the category extension value for such products, accounting for several drivers and moderating forces. We illustrate the managerial usefulness of the valuation approach by applying scenario analyses for four different kinds of bestseller brands and movie adaptations before discussing managerial and research implications.

Existing research on category extension valuation and reciprocal spillover effects

The valuation of category extension rights

Very little research has addressed the financial valuation of extension rights despite their critical role for several firms. Indeed, we are not aware of a single study that has offered an

approach for valuing category extensions. Smith and Park (1992) study the effects of brand extensions on market share, but they focus on comparing the overall effectiveness of extensions to alternate branding strategies. Lane and Jacobson (1995) investigate stock market reactions to extension announcements, thus acknowledging the role of the attitude to and familiarity of the parent. Some authors have also suggested the use of real options theory for valuing brand extensions, which however would require a multiperiodic perspective (e.g., Dias and Ryals 2002). None of these studies offers an approach for valuing individual brand extension rights, and none accounts for the role of reciprocal spillover effects.

An exception is Hennig-Thurau et al. (2009), who apply Simon and Sullivan's (1993) brand valuation framework to movie sequels using an event study design. Their model focuses on the forward spillover effect and sequel-specific moderators of that effect. Although the authors also acknowledge the role of reciprocal effects, they do not account for moderators of these effects. As movie sequels are line and bestseller adaptations are category extensions, it is also important to note that consumers evaluate these two types of extensions differently (e.g., Redden 2008), because the change of categories implies a change of modality (Joshi and Mao 2012).

Reciprocal spillover effects

Extant brand extension research has focused on forward spillover effects that occur when consumers use their knowledge of a brand in developing preferences for a new product. Less attention has been directed toward the reciprocal spillover effect, which arises when a branded extension product affects its parent brand (Balachander and Ghose 2003; Martinez et al. 2009). To date, only few scholars have analyzed the influence of extension launches on parent brands with objective data, using sales or other measures of a parent brand's success. Others have employed attitudinal measures, such as the parent's image, as dependent variables (e.g., Keller and Aaker 1992). These, however, are of less relevance in the context of our research with its focus on the financial valuation of extensions rights. We thus concentrate on success-related studies.

Findings on main effects To test the reciprocal spillover effect, studies have analyzed the effects of different variables, defined as market success of the extension, its advertising budget, or its mere existence, on parent brand success. Regarding extension success, Swaminathan et al. (2001) use scanner panel data and find a positive reciprocal spillover effect of trial in the case of successful category extensions and a negative reciprocal spillover effect of trial in the case of unsuccessful category extensions on parent brand choice. Using an event study approach and defining success in terms of the positive/negative publicity for the extension product, Sullivan's (1990) results for line extensions are similar.

Regarding marketing support for an extension, Erdem and Sun (2002) are the only ones who have studied category extensions. They analyze cross-category product sales of umbrella brands and find exposure to advertising of an extension in one category to increase product sales in another category of the same umbrella brand. Regarding line extensions, Sullivan (1990) finds a negative effect of advertising for a new car extension on older models of the same brand, whereas Balachander and Ghose (2003) report that the choice probability of a parent brand is increased when consumers are exposed to advertising for an extension within the same category; they speculate that differences result from the product categories used.

While the above-mentioned studies are concerned with fast-moving consumer goods and durables, two studies have addressed feedback effects in the same context as this research, i.e., entertainment products. This distinction is important because entertainment products are different in two aspects that affect brand extension processes. First, they usually have a short life cycle (e.g., Luan and Sudhir 2010), which implies that parent sales are low or non-existent when an extension is introduced. Second, consumers do not choose entertainment products for instrumental reasons but instead seek the sensual and emotional sensations which accompany their consumption (Hirschman and Holbrook 1982). This causes satiation effects and has consequences for the role of parent–extension fit (Inman 2001; Sood and Drèze 2006). Both studies of entertainment products focus on line extensions: Hendricks and Sorensen (2009) examine weekly sales of music albums and find the average effect of the introduction of an artist's second music album on the sales of the preceding album to be positive, and Hennig-Thurau et al. (2009) find a positive feedback effect of movie sequels on DVD sales of original movies.

Findings on moderating effects[1] In the context of success studies, few scholars have investigated moderating forces of the reciprocal spillover effect. Swaminathan (2003) studies the effects of subsequent extension trials on parent brand choice with scanner panel data and finds the effect of extension trial to differ between two investigated brands. A post-hoc analysis revealed that the brands are also different in their perceived fit (as rated by respondents), which Swaminathan interprets as support for a moderating role of perceived fit. Attitudinal studies have also analyzed the role of fit, with mixed results (Ahluwalia and Gürhan-Canli 2000; Keller and Aaker 1992).

A second category of moderators comprises parent-specific characteristics. In particular, the results of Hendricks and

Sorensen (2009) indicate that the success-based reciprocal spillover effect of a music artist's second album on sales of the first album might be moderated by parent brand strength. The authors observe that percentagewise the largest reciprocal spillover occurs when a weak parent ("non-hit" album) is followed by a strong extension ("hit" album), but they do not test for the direction or significance of a moderating effect. Attitudinal studies have also investigated the moderating role of parent brand–specific characteristics such as "quality", usually arguing that the image of a parent brand is less affected by an extension when the quality of the parent brand is high (Keller and Aaker 1992).

In summary, very few studies have addressed the financial valuation of brand extensions, and even fewer have looked into the respective role of reciprocal spillover effects despite clear evidence of their importance. Situated in the context of entertainment products, this paper is the first to offer a systematic model of the moderating forces of reciprocal spillover effects, building on the limited findings reported above. The model is then used to determine the value of category extensions of entertainment brands (i.e., movie adaptations of bestsellers).

## A model of reciprocal spillover effects for category extensions of entertainment products

Model overview and theoretical underpinning

Drawing on brand extension research, we argue that when an entertainment product such as a novel is extended into a different category (e.g., movies), key extension characteristics, namely, the financial success of an extension (i.e., product sales) and the marketing support given to the extension, exert a direct positive influence on the success of the parent. Moreover, we propose that a number of moderator variables influence the strength of this reciprocal spillover effect. We derive the moderators of parent–extension fit and parent brand characteristics from extant brand extension research. In addition, we argue that the reciprocal spillover effect is moderated by a new category of moderators for which we coin the term *backward integration characteristics*. Figure 1 gives an overview of our conceptual model.

When developing the hypotheses for the potential moderators, we build on the accessibility-diagnosticity framework of Feldman and Lynch (1988). According to this theoretical approach, the likelihood that a piece of information is used for decision making depends on two factors: (1) its diagnosticity (i.e., its relevance to consumers) and (2) its accessibility and the accessibility of other available pieces of information. The accessibility-diagnosticity framework has been successfully applied in the context of brand extensions

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[1] In addition to the moderators reported in this section, some authors have also studied consumer characteristics and category similarity. As neither are available to and/or relevant for managers in the context of this research, we refrain from including them in our review.

Fig. 1 Model of reciprocal spillover effects
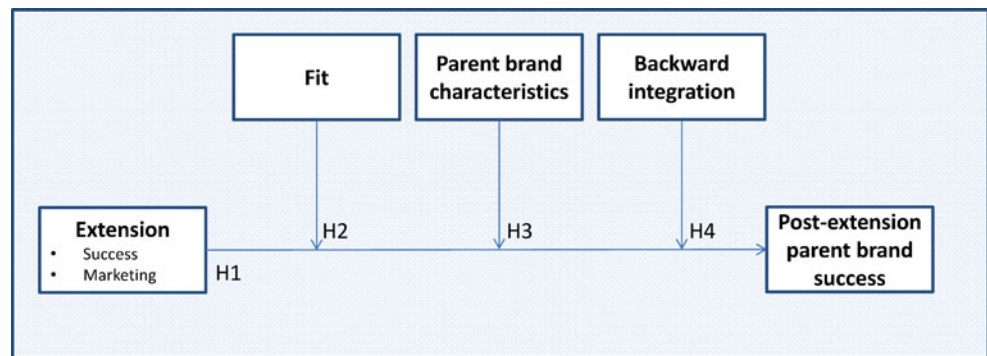
in previous research (e.g., Ahluwalia and Gürhan-Canli 2000; Joshi and Mao 2012; Meyvis and Janiszewski 2004). Here, it guided us in identifying moderators and postulating the direction of their respective effects.

Main effects hypotheses

The main logic underlying reciprocal spillover effects is that consumers use their brand knowledge of a brand extension when making judgments and decisions regarding the parent brand. Extant research summarized above has highlighted two sources of information that can trigger this effect: the financial success of an extension and the marketing support that an extension receives. Both success and marketing support have the potential to increase consumers' knowledge of the parent brand.

Specifically, we argue that the financial success of an extension (e.g., sales, such as box office revenues for movies) will increase brand awareness of the parent entertainment brand via repeated media coverage but will also affect quality associations of the brand by stimulating observational learning processes, such as cascades and herding (e.g., Chen et al. 2011). Although entertainment products such as novels usually have short life cycles which are in decline by the time a category extension such as a movie adaptation is introduced, we expect that the brand knowledge gathered from the category extension's financial success will positively influence the parent brand's success, thus reviving its life cycle.

Similar arguments apply to marketing support for the extension. We argue that such marketing support exerts a positive reciprocal spillover effect by increasing the brand awareness of the parent entertainment brand. In addition, marketing support serves as a quality signal to consumers (e.g., Basuroy et al. 2006). Here, too, we expect the extension-related knowledge generated by marketing support to stimulate parent sales despite the parent's typically short life cycle. We offer our first set of hypotheses:

H1a: When a category extension is introduced, the extension's financial success positively influences the success of the parent entertainment brand.

H1b: When a category extension is introduced, the marketing support for the extension positively influences the success of the parent entertainment brand.

Moderating effects hypotheses

Drawing on brand extension research (Swaminathan 2003) and the accessibility-diagnosticity framework (Feldman and Lynch 1988), we argue that a high degree of fit between an extension and a parent, in terms of the consistency of extension and parent brand attributes, strengthens the reciprocal spillover effect for category extensions of entertainment products.

Specifically, we reason that the fit between an extension and a parent brand supports the diagnosticity of information, that is, its usefulness or relevance (Miniard et al. 1992). Past research conducted in industries other than entertainment suggests that a cue pertaining to one item is perceived as more diagnostic of the other item if it shares more features or associations with it (e.g., Ahluwalia and Gürhan-Canli 2000). Transferred to the context of reciprocal spillover effects, a high extension–parent fit implies that the features of an extension product are similar to those of the parent product and are thus more diagnostic. Because higher diagnosticity indicates an increase in the likelihood of extension-related information being used to evaluate the parent brand, a high level of fit should strengthen the reciprocal spillover effect.

In the context of entertainment products, however, research has pointed out the hedonic nature of these products and argued that, under certain conditions, satiation effects can occur that imply a preference for dissimilarity between extension and parent instead of similarity. While Sood and Drèze (2006) find some support for this argument when studying the forward spillover effect for line extensions, other research in the same context discovers a positive effect of high fit (Hennig-Thurau et al. 2009). As we investigate category extensions for which satiation can be expected to occur less easily (Joshi and Mao 2012), we expect the diagnosticity-based effect to dominate potential satiation effects. We

propose that extension–parent fit exerts a positive moderating influence on the reciprocal spillover effect regardless of whether the effect is caused by the financial success of the extension or the marketing support for it.

We offer our next set of hypotheses:

H2a: The fit between a category extension and a parent entertainment brand moderates the reciprocal spillover effect of the financial success of the extension on post-extension release parent brand success, with the effect being stronger if the extension–parent fit is high.

H2b: The fit between a category extension and a parent entertainment brand moderates the reciprocal spillover effect of marketing support for the extension on post-extension release parent brand success, with the effect being stronger if the extension–parent fit is high.

For the second category of moderator variables, we argue that the characteristics of a parent entertainment brand also moderate the reciprocal spillover effect. We focus on the financial success of the parent brand *prior* to the introduction of the extension product, as this is a central characteristic of the parent brand and serves as a proxy for its initial strength.

We expect parent brand strength to foster the accessibility of extension-related information for potential customers of a parent entertainment brand. Consumers can transfer information from an extension to a parent only if they are aware of the parent brand and the respective connection. Therefore, if consumers lack knowledge about the parent brand, a transfer of attitude to the parent brand cannot take place. But if accessibility is high, consumers are more likely to use information on an extension's success or marketing-based information when buying a product in the parent category. Consequently, parent brand strength should enhance the reciprocal spillover effect and result in more consumers linking adaptation information (e.g., on movies) to entertainment parents (e.g., books).

Hence, if an extension is derived from a strong entertainment brand, consumers will immediately be aware of the connection and will use this accessible information to transfer their extension-based attitude to the parent brand. In contrast, if an extension is based on an unknown parent brand, consumers will not have readily retrievable information about the parent brand and will thus treat the extension as a new brand (with a small or non-existent reciprocal effect). Accordingly, a successful movie adaptation should stimulate the sales of a popular book on which it is based (and for which awareness is high) more than the sales of a book that was read only by niche segments prior to the release of the extension (and for which awareness is low).

We thus expect parent brand strength to amplify the reciprocal effects of both extension success and marketing support for category extensions, as expressed in our next set of hypotheses:

H3a: The success of a parent entertainment brand before the category extension was released moderates the reciprocal spillover effect of the success of the extension on post-extension release parent brand success, with the effect being stronger if the parent's success before the extension release was high.

H3b: The success of a parent entertainment brand before the category extension was released moderates the reciprocal spillover effect of marketing support for the extension on post-extension release parent brand success, with the effect being stronger if the parent's success before the extension release was high.

Finally, we introduce a new category of variables that we refer to as backward integration characteristics and argue that they also moderate the reciprocal spillover effect. In general, backward integration characteristics account for the support (or lack thereof) that a parent brand company provides for the introduction of an extension through marketing activities. Examples of backward integration are the prominent presentation of information regarding an extension on the packaging of its parent brand or the mention of an extension as part of a commercial for the parent brand. Such support can often be found in entertainment industries such as the book and the game industry: when a movie adaptation opens, books are re-released with a new cover that contains an explicit reference to the adaptation, and for games a sticker reading "Now a major motion picture" is added to the packaging. To the best of our knowledge, the only research that has pointed out a related effect is a study by Ahluwalia and Gürhan-Canli (2000), who manipulate the level of accessibility of extension information (a brand name in this case) in a laboratory study and find that intervening tasks between exposure to the brand and the evaluation of an extension influence brand evaluation. However, they clearly stress the limited transferability of their manipulations to real-world settings.

We argue that, as a high level of backward integration implies the parent's active support of the connection between the two products (i.e., extension and parent), extension-related information such as advertising or success reported in the media is easily accessible. Because high levels of backward integration imply that information regarding extensions is provided via the marketing mix of parents, consumers will have the extension-related information readily available when searching for a new product in the parent brand's product category.

Thus, backward integration should increase the accessibility of extension-related information by refreshing such information and stimulating the transfer of associations. As a consequence, we expect that, as backward integration is particularly prominent in entertainment industries, backward integration positively moderates the reciprocal spillover effect between an extension and its parent entertainment brand. We offer our final set of hypotheses:

H4a: The level of backward integration of a category extension of an entertainment brand moderates the reciprocal spillover effect of the financial success of the extension on post-extension release parent brand success, with the effect being stronger if backward integration is high.

H4b: The level of backward integration of a category extension of an entertainment brand moderates the reciprocal spillover effect of the marketing support for the extension on post-extension release parent brand success, with the effect being stronger if backward integration is high.

Testing the reciprocal spillover effect model: the case of movie adaptations of book brands

We now empirically test the reciprocal spillover model and then use the results for valuing real-world category extensions.

Context and data

We tested our model of reciprocal spillover effects in the context of movie adaptations of book brands. Such adaptations are major sources of content and revenue for the movie industry; eight of the top 20 movies of all time are based on novels (Boxofficemojo.com 2012). Here, the brand of a book (i.e., the parent) is extended into a new product category, namely, movies (i.e., the extension). Our dataset comprises all 446 literature adaptations that were theatrically released in North America between 1998 and 2006. These movie releases account for approximately one quarter of all theatrical movie releases during this time span. We excluded movies based on comics and graphic novels not published in book form from the analysis because no success-related information was available for them (see Joshi and Mao 2012 for the same procedure).

Analyzing books as examples of entertainment products and movie adaptations as examples of category extensions offers three advantages for our analysis. First, books and their cinematic adaptations are nearly always produced by different companies. Thus, a book brand is extended not only across categories but also across companies, which ensures the relevance of the extension right's financial valuation. Second, the core product of the parent (i.e., the book) is easily separable from its extension, which is important for the operationalization of backward integration. Third, longitudinal data on the success of parent brand products are available and thus enable the distinction between pre- and post-extension release periods. In addition, extensive data on controls are available.

Measures

For measuring book (i.e., parent brand) success, we employed book sales ranks as a proxy for book sales (e.g., Chevalier and

Mayzlin 2006; Joshi and Mao 2012). For all book titles in the dataset, we obtained the weekly ranks of the books on the *USA Today Best-Selling Books* list since the list's inauguration in 1993. The *USA Today Best-Selling Books* list includes the 150 book titles that are sold most in a given week, and the list is based on a broad range of both offline and online retail outlets, including Amazon.com, Barnes & Noble, and Target discount stores as well as independent local bookstores (*USA Today* 2012).

We assigned points to every weekly rank to account for the unequal distribution of awareness and sales among the 150 ranks on the list (see Ho et al. 2009 for a similar treatment of ranked buzz data). Specifically, we calculated the book points as follows: $p_b^w = {}^1/{r_b^w} \times 150$, where p is the number of points assigned to book b in a given week w, and r is the book's rank in the same week. We then cumulated the book points over the lifetime of each title. We prefer this comprehensive cumulative measure over the peak rank on the bestseller list as used by Joshi and Mao (2012), who use the book's highest bestseller rank as their independent variable. Where a book was part of a series (e.g., the book *Harry Potter and the Sorcerer's Stone* as part of the Harry Potter book series), we only considered those points for the book that served as the direct basis for the respective movie adaptation (i.e., the movie *Harry Potter and the Sorcerer's Stone*). To see if reciprocal spillover effects also exist for other books of a series, we ran separate analyses (see below). To control for potential differences between movie adaptations based on books belonging to a book series instead of stand-alone books, we added a binary variable which took the value 1 if the parent brand product was part of a book series (of which at least two books were published before the release of the movie) and 0 otherwise.

To eliminate potential reverse causality concerns, we partitioned the time frame of the data collection into three distinct sections. The first section accounts for the pre-release success of each book and includes all book points until 3 months before the release of the movie adaptation of the book (i.e., when movie studios begin to advertise their films). This information was used to measure pre-extension parent brand success. The second section encompasses all book points that were received after each movie was released. This information was used as our measure of post-extension release parent brand success, the main dependent variable of this study. The third section refers to all book points in the 3-month window before a movie's release. We deliberately excluded these data from our analyses, as pre-release movie advertising typically occurs during this period. Because a book's sales are likely to be influenced by the movie extension's advertising, the inclusion of these data would have resulted in distorted pre-release book points.

As our measure of the financial success of the category extension, we used the actual box office revenues in US$ (adjusted for inflation) generated by a movie adaptation. We

measured marketing support for the extension as a combination of two key marketing areas: advertising and distribution. Specifically, we obtained information on the pre-release advertising expenditures of movies and the numbers of theatres in which the movies were released on their opening weekends (an established measure of the distribution intensity of a movie). After adjusting the advertising expenditures for inflation, we standardized both measures and calculated the mean of both values, which was then used in the analyses.

Regarding moderators, we measured extension–parent fit in accordance with the book–movie similarity measure of Joshi and Mao (2012). That is, we defined fit as high if a book author was associated with the production of the movie, as such an association is likely to have ensured a smooth transition from the book to the movie adaptation. With the author being knowledgeable of every aspect of the book, he or she is an expert at making important decisions regarding changes to the brand (e.g., changes of the characters' nature or the "tone" of a novel). In our data, this type of association was typically observed when the author served as screenplay writer, movie producer, or consultant. Fit is thus a binary variable, where high fit indicates the existence of such an association while low fit is characterized by no participation of the author in the production of the movie.

For backward integration, we measured whether a book publisher issued a new version of a book because of the release of the movie adaptation. When such a strategy (termed *tie-in* in the book industry) is used, the movie adaptation is mentioned on the book cover and/or the movie poster motive replaces the original book cover. In our data, we defined backward integration as the use of such a tie-in strategy for a book and assigned values of 1 (backward integration, tie-in strategy used) or 0 (no backward integration, no tie-in strategy used).

For variables with a highly skewed distribution (i.e., marketing, book points, and box office revenues), we used the logarithm to approximate a normal distribution, consistent with extant research (e.g., see Chevalier and Mayzlin 2006 for book points; Hennig-Thurau et al. 2009 for revenues). Rather than using raw data on box office revenues, we performed an auxiliary regression by regressing box office revenues on marketing and used the unstandardized residuals of this regression as our measure of box office revenues.[2] This approach was necessary to avoid multicollinearity and to address potential order problems, as the box office revenue of a film is largely a function of its marketing (Elberse and Anand 2007). Thus, a failure to account for this effect would have inflated the reciprocal spillover effect of the box office revenues.

Finally, because we considered it essential to test all interactions in a single model (rather than separately), we applied

the residual centering approach of Lance (1988) to generate the interaction terms. Residual centering is known to reduce multicollinearity among interactions and has been successfully employed in the context of brand extension research (e.g., Bottomley and Holden 2001; Hennig-Thurau et al. 2009). Specifically, for each interaction effect, we performed an OLS regression of the product term on the two main effects and used the residuals of that regression in the final analysis.

We report details on the measurement in Table 1 and list bivariate correlations and descriptive statistics in Table 2.

Equation 1 shows the model, with post-extension release parent brand success serving as the dependent variable:

$$lnPOST\_PB_i = \alpha_0 + \alpha_1 lnEXT\_MKT_i + \alpha_2 res(lnEXT\_SUC_i) + \alpha_3 FIT_i \\ + \alpha_4 BWD\_INT_i + \alpha_5 lnPRE\_PB_i + \alpha_6 SERIES_i + \alpha_7 (lnEXT\_MKT_i \times FIT_i) \\ + \alpha_8 (res(lnEXT\_SUC_i) \times FIT_i) + \alpha_9 (lnEXT\_MKT_i \times BWD\_INT_i) \\ + \alpha_{10}(res(lnEXT\_SUC_i) \times BWD\_INT_i) + \alpha_{11}(lnEXT\_MKT_i \times lnPRE\_PB_i) \\ + \alpha_{12}(res(lnEXT\_SUC_i) \times lnPRE\_PB_i) + \varepsilon_i$$

(1)

where *POST_PB* is the post-extension release parent brand success resulting from movie *i*, *EXT_MKT* is the marketing support for the extension, *EXT_SUC* is the success of the extension (a residual term after controlling for *EXT_MKT*), *FIT* is the extension–parent fit, *BWD_INT* is the backward integration of the parent, *PRE_PB* is the pre-extension parent brand success, and *SERIES* is the control for serialized parent brands.

Results of model test

To estimate Eq. 1, we applied OLS regression analysis; Table 3 reports the results. The R^2 value and the F-statistic indicate that post-extension release parent brand success is well explained by the model variables. Multicollinearity is not a problem in these data, as all variance inflation factors (VIFs) are well below 2. We performed a Durbin-Wu-Hausman test to test for endogeneity using instruments that have been successfully employed in previous media studies (e.g., Elberse and Eliashberg 2003). The results confirm the absence of endogeneity. A Durbin-Watson statistic of approximately 2 eliminates the possibility of serial correlation in the residuals.

The analysis provides evidence for the existence of the reciprocal spillover effect in our data—both the financial success of the extension ($b=.38$, $t=4.65$, $p<.01$) and marketing support for the extension ($b=.99$, $t=7.67$, $p<.01$) have a strong positive impact on the post-extension release success of the parent brands. These results offer full support for both H1a and H1b.

Regarding interaction effects, extension–parent fit was found to moderate the main effects of both extension variables (i.e., success and marketing support). Consistent with H2a, the influence of the success of the extensions increases if fit is high ($b=.49$, $t=2.59$, $p=.01$). We also found support for H2b, as the influence of marketing support for extensions is also higher when

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[2] The resulting regression equation was $lnEXT\_SUC=1.126+2.616\times lnEXT\_MKT$ with $R^2=.759$. All coefficients were significant at $p<.01$.

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Table 1 Operationalization and data sources of the variables used in the reciprocal spillover effect model

Variable	Name	Description	Source
Main effects			
Pre-extension parent brand success	*PRE_PB*	Logarithm of the inverse of accumulated book points until 3 months before movie release	USA Today
Fit	*FIT*	Binary variable taking the value of 1 if the author was associated with the making of the movie (see Joshi and Mao 2012)	IMDb
Backward integration	*BWD_INT*	Binary variable taking the value of 1 if the movie is mentioned on the book cover and/or the movie poster motive replaces the traditional book cover	Amazon
Marketing support for the extension	*EXT_MKT*	Logarithm of the mean of pre-release advertising (inflation adjusted, standardized) and distribution intensity as measured by the number of North American opening theaters (standardized)	Kantar Media, TNS
Success of the extension	*EXT_SUC*	Residual of the logarithm of box office gross revenue in the US (inflation adjusted), the usual measure of financial success of movies	IMDb
Book series	*SERIES*	Binary variable taking the value of 1 if the book is part of a book series with at least two entries published before movie release	Wikipedia
Interaction effects			
Interaction of the marketing of the extension with fit	*EXT_MKTxFIT*	CPR of the regression of the marketing of the extension and fit on the CPT of the two variables	See main effects
Interaction of the success of the extension with fit	*EXT_SUCxFIT*	CPR of the regression of the success of the extension and fit on the CPT of the two variables	See main effects
Interaction of the marketing of the extension with pre-extension parent brand success	*EXT_MKTxPRE_PB*	CPR of the regression of the marketing of the extension and pre-extension parent brand success on the CPT of the two variables	See main effects
Interaction of the success of the extension with pre-extension parent brand success	*EXT_SUCxPRE_PB*	CPR of the regression of the success of the extension and pre-extension parent brand success on the CPT of the two variables	See main effects
Interaction of the marketing of the extension with backward integration	*EXT_MKTxBWD_INT*	CPR of the regression of the marketing of the extension and backward integration on the CPT of the two variables	See main effects
Interaction of the success of the extension with backward integration	*EXT_SUCxBWD_INT*	CPR of the regression of the success of the extension and backward integration on the CPT of the two variables	See main effects
Dependent variable			
Post-extension release parent brand success	*POST_PB*	Logarithm of the inverse of accumulated book points after movie release	USA Today

CPR cross-product residuals, CPT cross-product term

Table 2 Correlations and descriptive statistics for the variables used in the reciprocal spillover effect model

Variable	Mean (std. dev.)	1	2	3	4	5	6	7
1 *PRE_PB*	1.112 (2.151)	–						
2 *FIT*	.2691 (.443)	.051	–					
3 *BWD_INT*	.5919 (.492)	.214**	−.011	–				
4 *EXT_MKT*	.7266 (.467)	.258**	−.147**	.178**	–			
5 *EXT_SUC*	.0000 (.689)	.112*	−.019	.029	.000	–		
6 *SERIES*	.0130 (.334)	.218**	−.081	−.010	.234**	.112*	–	
7 *POST_PB*	1.1953 (1.921)	.706**	.032	.281**	.409**	.214**	.251**	–

Logarithmic values are used for *PRE_PB*, *POST_PB*, *EXT_MKT*, and *EXT_SUC*

*Correlation is significant at the .05 level

**Correlation is significant at the .01 level (both 2-tailed)

Table 3 Regression results for the reciprocal spillover effect

	Coefficient	Beta	t-statistic	p-value	VIF
Intercept	−.430		−3.441	.001	
EXT_SUC	.383	.137	4.645	.000	1.046
EXT_MKT	.987	.240	7.666	.000	1.172
PRE_PB	.530	.594	18.900	.000	1.177
FIT	.160	.037	1.249	.212	1.050
BWD_INT	.414	.106	3.488	.001	1.100
SERIES	.241	.042	1.340	.181	1.165
EXT_SUC × FIT	.493	.077	2.589	.010	1.055
EXT_MKT × FIT	.759	.083	2.804	.005	1.042
EXT_SUC × PRE_PB	.000	.000	.007	.995	1.162
EXT_MKT × PRE_PB	.248	.106	3.400	.001	1.163
EXT_SUC × BWD_INT	.464	.082	2.797	.005	1.033
EXT_MKT × BWD_INT	.863	.103	3.443	.001	1.072
R^2	.637				
R^2 adjusted	.627				
F-statistic	63.376				
Prob. (F-statistic)	<.001				

Dependent variable: Post-extension release parent brand success (POST_PB)

fit is high ($b=.76$, $t=2.80$, $p<.01$). As an aside, the main effect of our binary fit measure is positive but not significant ($b=.16$, $t=1.25$, $p>.10$), which indicates that a parent brand benefits from a high fit only if its extension is successful and/or receives high marketing support.

Contrary to our expectations, the pre-extension success of a parent does not significantly moderate the effect of extension success on post-extension release parent brand success, which means we must reject H3a ($b=.00$, $t=.01$, $p>.10$). However, we did find support for the postulated moderating role of the pre-extension success of parents for the marketing support for extensions: The influence of marketing support for an extension on post-extension release parent brand success is higher for initially strong parent brands ($b=.25$, $t=3.40$, $p<.01$), which is consistent with H3b. The pre-extension success of parent brands also exerts a main effect on post-extension release parent brand success ($b=.53$, $t=18.90$, $p<.01$).

Furthermore, we find the new concept of backward integration to also moderate the reciprocal spillover effect. Similar to the results for fit, the effect of both extension variables on post-extension release parent brand success increases if backward integration is used ($b=.46$, $t=2.80$, $p<.01$ for extension success; $b=.86$, $t=3.44$, $p<.01$ for marketing support for the extensions). These results are fully in support of H4a and H4b. In addition, the binary measure of backward integration also exerts a positive and significant direct effect on post-extension release parent brand success ($b=.41$, $t=3.49$, $p<.01$). Hence, if a company decides to integrate information pertaining to an extension in the marketing mix of its parent, the parent brand

can benefit both directly and indirectly through an increased reciprocal spillover effect. Finally, the book series variable we added as a control did not exert a significant impact on the dependent variable ($b=.24$, $t=1.34$, $p>.10$).[3]

Post-hoc analysis: reciprocal effects for serialized parent brands[4]

Do additional reciprocal spillover effects exist for other entries of the same book series? For example, does the second Harry Potter movie have an effect on the sales of the first Harry Potter book? Such a finding would further increase the importance of reciprocal effects for brand extensions whose parents have been serialized. To shed light on this question, we conducted a post-hoc analysis for book series which can also fertilize initial research on sequential brand extensions (e.g., Keller and Aaker 1992).

Specifically, we adapted the model reported in Eq. 1, but now used the post-extension release success of a non-corresponding element of a book series as dependent variable (e.g., the success of the first Harry Potter book resulting from the second Harry Potter movie). Again, we tested such effects for both the extension's financial success as well as for its marketing support. The pre-extension success of the non-corresponding entry (PRE_PB_ENTRY) was added as a control. As the individual entries of a book series can arguably be affected differently by a movie extension, with earlier entries (which are often most prevalent in consumers' brand memory) being affected more strongly, we also included the position of the non-corresponding entry as a moderator. We tested two variations of this moderator: a continuous variable which assigned to each entry its number in the book series (POSITION_NUM in Model A) and a dummy variable which took the value 1 if the book was the first entry in its series and 0 otherwise (1^{ST}_POSITION in Model B).

The dataset for this post-hoc analysis comprises all movies from the 1998–2006 time span that are based on a book series with separately identifiable book entries. It encompasses 56 book-based movies and 283 different books that were published prior to the release of a movie, adding up to a total of 299 cases. We excluded those books from the book series sample that directly served as the source for the movie so that only the effects of a literature adaptation on non-corresponding entries of the same book series were taken into account. To separate the effects of different movie sequels on the same book, we used only the book points generated within 1 year after the respective movie release.

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[3] We also tested for potential moderating effects of the book series variable, which were also non-significant. As an additional robustness check, we ran the analysis without adaptations based on a book series; results again remained robust.

[4] We thank an anonymous reviewer for suggesting this post-hoc analysis.

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The regression results are shown in Table 4. In general, they provide evidence that the reciprocal spillover effect of an extension is not limited to the corresponding parent but can also affect other products that belong to the same brand series. Specifically, we found the success of a movie extension to increase the success of previously published book entries in both Model A and B. The main effect of the extension's marketing support is also positive, but is only marginally significant ($p=.051$) in Model A.

The results also provide support for a moderating effect of the position of the non-corresponding entry. Whereas being the first in the brand series interacts positively with both the success and the marketing support of the extension (Model B), no significant interaction is found for an entry's number in the book series (Model A). These differences indicate that the moderating effect holds true only for the initial product of the series and does not evolve linearly along the product line.

Using the reciprocal spillover model to calculate the overall value of category extensions of entertainment brands

Procedure

A comprehensive evaluation of category extension value requires the inclusion of both forward and reciprocal spillover effects. Because we found support for a positive reciprocal spillover effect, considering only the forward spillover effect when calculating the value of a category extension right would lead to distorted extension right prices. As a result of the positive direction (i.e., complementary character) of the feedback effect, this bias would systematically penalize extension right buyers.

To model category extension value in a comprehensive manner, we used a two-step procedure that combines the results of our analysis of reciprocal spillover effects with extant knowledge on forward spillover effects in the context of movie adaptations of books. Regarding the latter, Joshi and Mao (2012) provide evidence that a book's highest bestseller rank affects the box office revenues of its adaptation, and that recency (i.e., the time interval between the book's peak on the bestseller list and the release of its movie adaptation) and book–movie similarity positively affect opening weekend box office revenues. The authors also find recency and similarity as well as critical reviews to interact with parent brand sales in that the forward spillover effect can be strengthened by high recency, high similarity, and good movie reviews. No book-related variable (apart from bestseller rank) was found to influence the box office revenues generated after the opening weekend and the authors did not study reciprocal spillover effects.

Building on the valuation approach for line extensions by Hennig-Thurau et al. (2009), we first applied OLS regression to estimate an equation for forward spillover

Table 4 Book serial regression results for the reciprocal spillover effect

	Model A					Model B				
	Coefficient	Beta	*t*-statistic	*p*-value	VIF	Coefficient	Beta	*t*-statistic	*p*-value	VIF
Intercept	−.310		−1.853	.065		−.170		−1.482	.139	
EXT_MKT	.264	.079	1.959	.051	1.276	.199	.059	1.614	.108	1.095
EXT_SUC	.329	.085	2.299	.022	1.090	.388	.101	2.741	.007	1.096
PRE_PB (corresp.)	.467	.757	10.390	.000	4.185	.469	.760	11.016	.000	3.857
PRE_PB_ENTRY (non-corresp.)	−.008	−.013	−.188	.851	3.692	−.017	−.027	−.387	.699	3.890
POSITION_NUM	.004	.051	1.175	.241	1.471					
EXT_MKT × POSITION_NUM	−.012	−.059	−1.587	.114	1.084					
EXT_SUC × POSITION_NUM	−.022	−.040	−1.110	.268	1.042					
1^{ST}_POSITION						.000	.000	−.002	.999	1.142
EXT_MKT × 1^{ST}_POSITION						2.462	.127	3.451	.001	1.094
EXT_SUC × 1^{ST}_POSITION						.660	.073	2.017	.045	1.050
R^2	.631					.641				
R^2 adjusted	.622					.633				
F-statistic	71.095					74.288				
Prob. (F-statistic)	<.001					<.001				

Dependent variable: Post-extension release success of non-corresponding parent brand entry

For *EXT_SUC*, the residual value was used; for *EXT_MKT, EXT_SUC, PRE_PB, PRE_PB_ENTRY*, and the dependent variable logarithmic values were used

effects and to determine the effect of parent brands on the success of extensions. In the second step, we combined the results of the first step with the estimation results for the reciprocal spillover effect, as reported in Table 3, to calculate the overall influence of the extensions on the parent brands.

Step 1: estimating the forward spillover parameters

When estimating the forward spillover effect, we considered those extension-related variables that were specified by Joshi and Mao (2012) in addition to the variables highlighted in the previous section. Because the extension product is a movie in the context of book adaptations, these additional variables are also movie-specific and would need to be replaced by other industry-specific success drivers when transferring our model of overall category extension value to other products within or beyond the entertainment context.

Specifically, the additional variables were the budget of each movie (*BUDGET*), whether at least one major star participated in the movie (*STAR*), the movie genre (*GENRE*, a vector of different movie genres), the movie rating by the Motion Picture Association of America (*MPAA*), the season in which the movie was released (*SEASON*), whether the movie was a sequel (*SEQUEL*), and evaluations by the audience (*AUD*) and by professional critics (*CRITICS*). Another variable that we adapted from Joshi and Mao (2012) was adaptation recency (*RECENCY*), which describes the time gap between the adaptation and the most recent listing of the book on the bestseller list (taking the value 1 if the book was a bestseller during the 12 months preceding movie advertising).

We added marketing support (*EXT_MKT*), an established determinant of box office sales (e.g., Hennig-Thurau et al. 2006) which encompasses both advertising for and distribution of a movie (see above), and the book series variable (*SERIES*) to the model. As in the reciprocal spillover effect model, we used the logarithm of the skewed variables (i.e., marketing, pre-extension parent brand success, production budget, and extension success). Table 5 describes the variables and their data sources in detail, and Table 6 lists the correlations and descriptive statistics.

Equation 2 shows our model of the forward spillover effect:

$$lnEXT\_SUC_i = \beta_0 + \beta_1[EXT\_VARIABLES_i] + \beta_2SERIES_i + \beta_3lnPRE\_PB_i + \beta_4FIT_i + \beta_5RECENCY_i + \beta_6[INTERACTIONS_i] + \varepsilon_i$$

(2)

where matrix [*EXT_VARIABLES*] comprises the different extension-related variables (i.e., *EXT_MKT*, *BUDGET*, *STAR*, *AUD*, *CRITICS*, *SEQUEL*, the *GENRE* vector, *MPAA*, and

SEASON), and *RECENCY* is the adaptation recency of movie *i*. The matrix [*INTERACTIONS*] contains all interactions that were specified by Joshi and Mao (2012), namely, *lnPRE_PB* × *RECENCY*, *lnPRE_PB* × *FIT*, *lnPRE_PB* × *CRITICS*, and *CRITICS* × *FIT*.

Table 7 reports the results of an OLS regression of this forward spillover effect model. In contrast to Joshi and Mao (2012), who estimated the model separately for the opening weekend and long-term box office revenues, we used the total box office revenues as our dependent variable, consistent with our objective to determine the overall value of extension rights.

Overall, our results are mostly consistent with the long-term results of Joshi and Mao (2012). Regarding the book-related variables, we show that pre-extension parent brand success influences box office revenues only as part of an interaction with extension recency, whereas Joshi and Mao (2012) find that pre-extension parent brand success exerts a main effect on box office revenues. Our results suggest that the parent brand must be a bestseller that is fresh in the memories of consumers and therefore accessible for them to significantly influence the success of the extension.[5]

Step 2: calculating the overall category extension value

We now suggest how the results from the reciprocal spillover effect estimation and the forward spillover effect estimation can be integrated to calculate the overall category extension value for any individual book brand. Rights owners and potential buyers of book rights first need to determine the box office revenue of a specific book adaptation by entering the characteristics of the book and the movie (as projected by the potential buyer) into the forward spillover model estimation (as reported in Table 7) to produce an approximation of the projected box office revenue for the specific movie project. This box office approximation can then be inserted into the reciprocal spillover model (as reported in Table 3). In conjunction with additional variables that must be specified for a specific book brand (e.g., backward integration), this approach will result in an approximation of the reciprocal spillover effect for the specific book in terms of additional post-extension release book sales.

In the following, we illustrate how rights owners and potential buyers of book extension rights can employ our approach. We used four different scenarios: With regard to the book aspect (i.e., the side of the rights owner/seller), we compared

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[5] We tested whether the inclusion of advertising spending in our study explains the non-significance of the main effect of pre-extension parent brand success (advertising was not included in Joshi and Mao (2012)). When performing a regression that included opening screens as the sole measure of marketing support, we found the same pattern reported by Joshi and Mao (2012), with the main effect of pre-extension parent brand success being significant ($b = .048$, $p < .05$).

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Table 5 Operationalization and data sources of the variables used in the forward spillover effect model

Variable	Name	Description	Source
Main effects			
Budget	BUDGET	Logarithm of the budget of the movie (inflation adjusted)	IMDb, Boxofficemojo
Marketing support for the extension	EXT_MKT	Logarithm of the mean of pre-release advertising (inflation adjusted, standardized) and distribution intensity as measured by the number of North American opening theaters (standardized)	Kantar Media, TNS
Star	STAR	Binary variable taking the value of 1 if at least one star participated in the movie; a star is defined as an actor who was at least once included on the Quigley's "Top 10 MoneyMakers Poll" list 3 years preceding movie release[a]	Quigley
Critics	CRITICS	Rating for the movie by professional movie critics	Metacritic
Audience evaluation	AUD	Rating for the movie by consumers (mean of Yahoo ratings (standardized) and Netflix ratings (standardized))	Yahoo, Netflix
Sequel	SEQUEL	Binary variable taking the value of 1 if the movie is a sequel	IMDb
Genres: Comedy, Drama, Action, Sci-Fi	GENRE	Binary variable taking the value of 1 if the genre of the movie belongs to the genre category of the respective variable (see Joshi and Mao 2012)	IMDb
MPAA-Rating	MPAA	Binary variable taking the value of 1 if the movie was R-rated by the MPAA (US)	IMDb
Season	SEASON	Binary variable taking the value of 1 if the movie was released in June, July, August, or December	IMDb
Book series	SERIES	Binary variable taking the value of 1 if the book is part of a book series with at least two entries published before movie release	Wikipedia
Recency	RECENCY	Binary variable taking the value of 1 if the book was included on the *USA Today* bestseller list during the 12 months preceding movie advertisement	USA Today
Pre-extension parent brand success	PRE_PB	Logarithm of inverse of accumulated book points until 3 months before movie release	USA Today
Fit	FIT	Binary variable taking the value of 1 if the author was associated with the making of the movie (see Joshi and Mao 2012)	IMDb
Interaction effects			
Interaction of pre-extension parent brand success with recency	PRE_PBxRECENCY	CPR of the regression of the interaction of pre-extension parent brand success and recency on the CPT of the two variables	See main effects
Interaction of pre-extension parent brand success with fit	PRE_PBxFIT	CPR of the regression of the interaction of pre-extension parent brand success and fit on the CPT of the two variables	See main effects
Interaction of pre-extension parent brand success with critics	PRE_PBxCRITICS	CPR of the regression of the interaction of pre-extension parent brand success and critics on the CPT of the two variables	See main effects
Interaction of critics with fit	CRITICSxFIT	CPR of the regression of the interaction of critics and fit on the CPT of the two variables	See main effects
Dependent variable			
Success of the extension	EXT_SUC	Logarithm of box office gross revenue in the US (inflation adjusted)	Variety

CPR cross-product residuals, CPT cross-product term

[a] Please note that the Star measure does not account for the "target market" of a movie a star participates in—to retain its objectivity, however, we did not adjust the measure

a bestselling brand with a book that enjoyed only "average" pre-release book success. We used hypothetical cases for the simulation exercise, assuming that the bestseller had 2,000 pre-release book points (which is comparable to the bestseller *The Runaway Jury* by John Grisham) and that the "average" book had 100 pre-release book points (which is comparable to the pre-release success of *In Her Shoes* by Jennifer Weiner).

With regard to the movie adaptation (i.e., the decisions that fall into the realm of the potential buyers of

Table 6 Correlations and descriptive statistics for the variables used in the forward spillover effect model

Variable	Mean (std. dev.)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 BUDGET	3.305 (1.026)	—																
2 EXT_MKT	.726 (.467)	.801**	—															
3 STAR	.148 (.355)	.369**	.341**	—														
4 CRITICS	5.657 (1.800)	-.163**	-.221**	-.077	—													
5 AUD	.000 (.922)	.048	.069	-.031	.446**	—												
6 SEQUEL	.069 (.254)	.164**	.197**	-.039	-.006	.078	—											
7 Comedy	.298 (.457)	-.044	.088	.060	-.061	-.110*	-.005	—										
8 Drama	.699 (.458)	-.185**	-.293**	-.016	.254**	.138**	-.167**	-.257**	—									
9 Action	.143 (.350)	.319**	.284**	.064	-.114*	.037	.140**	-.183**	-.136**	—								
10 Sci-Fi	.056 (.230)	.211**	.196**	.146**	-.071	-.152**	-.067	-.116*	-.180**	.150**	—							
11 MPAA	.455 (.498)	-.232**	-.306**	-.127**	.171**	-.106*	-.073	-.202**	.265**	-.066	-.125**	—						
12 SEASON	.275 (.447)	.170**	.122**	.138**	.095*	.025	.009	-.007	-.110*	.077	.111*	-.050	—					
13 SERIES	.130 (.334)	.215**	.234**	.086	.004	.147**	.291**	.015	-.203**	.150**	-.006	-.215**	.079	—				
14 RECENCY	.105 (.307)	.264**	.283**	.042	.022	.156**	.107*	.048	-.078	.068	-.052	-.123**	.017	.219**	—			
15 PRE_PB	1.112 (2.151)	.262**	.258**	.066	.004	.111*	.167**	-.063	.020	-.015	-.037	-.059	.024	.218**	.705**	—		
16 FIT	.269 (.443)	-.178**	-.147**	-.054	.077	.027	-.047	.058	.133**	-.032	-.038	.085	-.103*	-.081	.022	.051	—	
17 EXT_SUC	3.026 (1.404)	.737**	.871**	.325**	.006	.282**	.221**	.074	-.233**	.252**	.121*	-.279**	.185**	.259**	.298**	.280**	-.137**	—

Logarithmic values are used for BUDGET, PRE_PB, EXT_MKT, and EXT_SUC

*Correlation is significant at the .05 level

**Correlation is significant at the .01 level (both 2-tailed)

Table 7 Regression results for the forward spillover effect

	Coefficient	Beta	t-statistic	p-value	VIF
Intercept	.302		1.784	.075	
BUDGET	.126	.092	2.601	.010	3.249
EXT_MKT	2.327	.775	21.577	.000	3.344
STAR	.126	.032	1.458	.145	1.231
CRITICS	.098	.126	5.226	.000	1.498
AUD	.249	.164	6.776	.000	1.512
SEQUEL	.141	.026	1.191	.234	1.190
Comedy	.108	.035	1.562	.119	1.311
Drama	−.073	−.024	−1.016	.310	1.415
Action	.046	.011	.515	.607	1.270
Sci-Fi	−.170	−.028	−1.283	.200	1.216
MPAA	−.005	−.002	−.083	.934	1.274
SEASON	.161	.051	2.487	.013	1.099
SERIES	−.003	−.001	−.034	.973	1.258
PRE_PB	.027	.041	1.412	.159	2.219
RECENCY	−.066	−.014	−.500	.617	2.163
FIT	−.035	−.011	−.541	.589	1.081
PRE_PB × RECENCY	.125	.047	2.309	.021	1.073
PRE_PB × FIT	.004	.003	.127	.899	1.066
PRE_PB × CRITICS	.002	.006	.291	.771	1.072
CRITICS × FIT	−.014	−.008	−.395	.693	1.067
R^2	.836				
R^2 adjusted	.828				
F-statistic	108.233				
Prob. (F-statistic)	<.001				

Dependent variable: Total North American box office revenues (extension success)

rights), we compared the offer of a major film studio with an offer by an independent producer. We assumed that the major film studio would invest in a high-budget production (i.e., $80 million) and would support the film with strong marketing (i.e., $40 million advertising expenditures and a nationwide release in 3,000 theatres), whereas the independent producer would have a production budget of $10 million, an advertising budget of $5 million and would distribute the film in only 500 theatres on release.

For each of the four book–movie combinations (i.e., bestseller/studio, average book/studio, bestseller/independent, average book/independent), we inserted the respective values in the regression equations while holding all other variables constant (using the dataset averages for metric variables). For binary variables, we used the same configuration for all scenarios (i.e., high fit, high backward integration, recent book success, no book series, no sequel, star participation, action movie, off-season release). We then estimated the expected box office revenues for all four scenarios and inserted this revenue estimate into the reciprocal spillover effect regression.

The results of these calculations in terms of expected box office revenues and post-release book sales are reported in Fig. 2.

Regarding the forward spillover effect in the context of our research, the results show that the literature adaptation of a bestseller generates an average of about 50% more box office revenues than a movie based on a book with average success. At the same time, the reciprocal spillover effect can evidently represent a major source of revenue for the publisher of such a book. If the publisher opts to sell the extension rights to a producer who realizes them in a low-budget project, additional revenues are likely to be marginal, accounting for only 9% of pre-release book points in the case of an average book brand and for even less (i.e., 3%) for a bestseller brand. In contrast, if such a book were adapted into a major movie production, the post-release book points could exceed the pre-release success of the book in both cases. As a consequence, the book publisher's choice of buyer should not depend solely on the height of a bid, but should also consider the project plans behind it.

If a buyer is willing to invest more in production and marketing, then the likelihood of a successful extension product increases. This higher success in turn can trigger the reciprocal spillover effect, which can generate substantial value for the publisher of the adapted book. In contrast, our simulations show that the low-budget project did not generate any noteworthy sales. Consequently, it may be more profitable for a publisher to consider the trade-off between the offered fee and the prospects of the projected movie rather than simply selling the rights to the highest bidder.

Discussion and implications

This study offers empirical evidence of the relevance of reciprocal spillover effects for category extensions of entertainment brands and illustrates how such effects can be embedded in a new valuation approach. Drawing from the brand extension literature and the accessibility-diagnosticity framework (Feldman and Lynch 1988), we develop a comprehensive framework of reciprocal spillover effects and test it in the context of movie adaptations of book brands. The results confirm the existence of reciprocal spillover effects in the context of this research—a parent brand is able to generate higher sales if an extension product is successful and/or receives strong marketing support. They also show that various moderating forces exists, with backward integration and a high parent–extension fit strengthening this effect, and marketing support for an extension being more effective for its parent when the latter is a strong brand. A post-hoc analysis indicates that the importance of the reciprocal spillover effect is particularly high for extensions of serialized parent brands, as additional revenues for other entries of the same product series can be generated.

Fig. 2 Estimates of exemplary post-hoc simulations
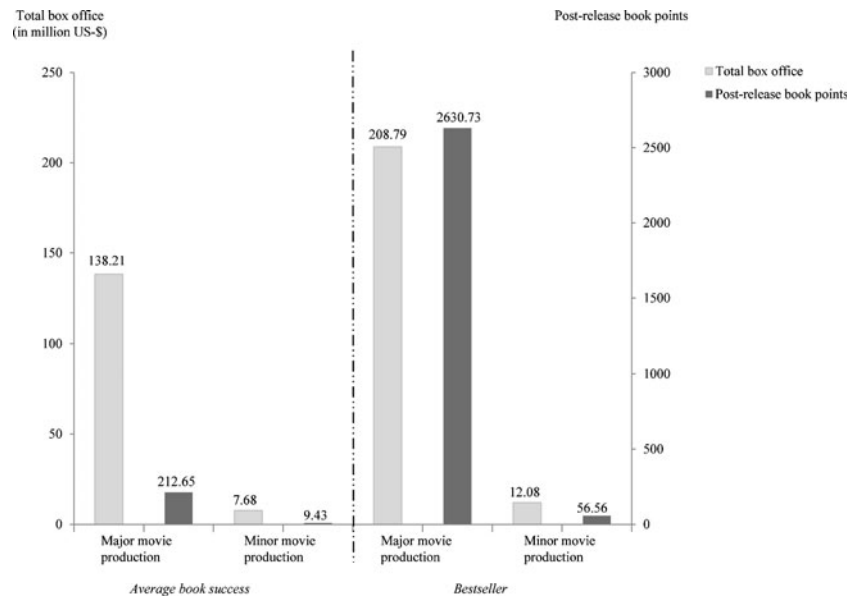
We combined these insights with previous academic findings to estimate the overall extension value of a bestseller brand and exemplified our approach by calculating the value of four hypothetical extensions using different scenarios. Our simulation illustrates that initially strong, but also "average" parent entertainment brands can earn more than they have generated in terms of pre-extension release sales. Although an average parent brand can benefit more than an initially strong parent brand in terms of percentages, strong parent brands have the potential to earn more in absolute terms.

Implications for managers

Our model offers a tool for valuing business alternatives in the context of financial negotiations with respect to brand (and specifically category) extension rights. In the entertainment industries, such decisions are predominantly based on gut feeling (*Newsweek* 1996; Young et al. 2008), an approach that lacks objectivity and a structured evaluation process. Contrasting the widely spread industry mantra of "nobody knows anything" (Goldman 1983), our approach provides detailed guidelines for extension right evaluations for both sellers and buyers of rights. The report of selected scenarios with different types of parent brands and extension products demonstrates implications for companies without requiring econometric expertise.

Our brand valuation approach provides insights for both potential buyers and owners of extension rights. Potential buyers can use our approach to calculate the additional sales they will be able to trigger with adaptations of different parents/book brands and unbranded projects. The buyer can then use these additional book sales as an argument for a discount, particularly when he or she can prove that alternative projects will generate lower post-extension release revenues for the parent. At the same time, the approach allows the rights owner to estimate potential additional

sales generated by the reciprocal spillover effect for different projects and to use this information as a decision criterion. In the world of movie rights trading, many books are optioned but never made into movies, and our approach demonstrates the losses of a rights owner resulting from the lack of beneficial feedback effects if this happens.

In addition, the moderators of the reciprocal spillover effect that have been empirically identified in this research can be used to refine the respective value estimations to an even greater extent, considering various specific characteristics of a book and its projected adaptations. By emphasizing the financial relevance of a successful extension for the parent brand owner, our study also highlights the importance of a smooth and professional transition of the essence of a novel into a movie. On a practical level, the existence of a backward integration factor shows that, in order to earn the greatest profit from the launch of an extension, a publisher should integrate the upcoming movie into the marketing mix for his or her book (e.g., by releasing a movie tie-in edition of the book).

Research implications and limitations

This research extends existing knowledge on reciprocal spillover effects. We develop a comprehensive framework of moderators and introduce backward integration as a new driver. While our arguments focus on category extensions of entertainment brands, some might be generalizable to other contexts. We consider this contextualization an interesting venue for future research. Regarding backward integration, although the inclusion of extension-related information in the marketing mix of a parent brand is easily realizable in the context of category extensions of entertainment products (where the parent brand equals the core product), such a strategy is more difficult in other product categories. For FMCG products, the

parent brand often does not have a clear core product but marks a family of diverse products with varying relations to the extension product. Furthermore, backward integration characteristics should be especially relevant for external category extensions in which the company of the parent brand differs from the company producing the extension. Because relatively little academic attention has thus far been devoted to the effect of external extensions compared with that of internal extensions on consumer decision making, external category extensions in general also offer a new direction for further research.

Using secondary data, we further demonstrate the relevance of the accessibility-diagnosticity framework of Feldman and Lynch (1988) in the context of reciprocal spillover effects. Ahluwalia and Gürhan-Canli (2000) claim that the role of accessibility has not been addressed sufficiently because of the nature of laboratory experiments in brand extension research, whereas the role of diagnosticity has been given prominent attention—information is typically highly accessible in a laboratory surrounding and likely categorized as more diagnostic than in a real-world setting. In our study, we address this concern by confirming the relevance of both accessibility and diagnosticity for reciprocal spillover effects with real-world data.

Some of our arguments build on the short life cycle of entertainment products. This characteristic does not apply to all entertainment products though, and for category extensions with different life cycle patterns (such as combinations of toys and movies, e.g., *Transformer*, or TV series and book series, e.g., *Gossip Girl*), reciprocal spillover effects might be different, as the parent brand is still in its maturity stage when the extension is released. With the strong trend of building franchises in Hollywood, there is great potential for extending this work.

Finally, our post-hoc analysis of book series offers first insights into sequential brand extensions. As this analysis serves for deepening our understanding of a special case of reciprocal spillover effects, further research on this complex phenomenon would be beneficial for broadening the academic brand extension literature.

References

Ahluwalia, R., & Gürhan-Canli, Z. (2000). The effects of extensions on the family brand name: An accessibility-diagnosticity perspective. *Journal of Consumer Research, 27*, 371–381.

Balachander, S., & Ghose, S. (2003). Reciprocal spillover effects: A strategic benefit of brand extensions. *Journal of Marketing, 67*, 4–23.

Basuroy, S., Desai, K. K., & Talukdar, D. (2006). An empirical investigation of signaling in the motion picture industry. *Journal of Marketing Research, 43*, 287–295.

Bottomley, P. A., & Holden, S. J. S. (2001). Do we really know how consumers evaluate brand extensions? Empirical generalizations based on secondary analysis of eight studies. *Journal of Marketing Research, 38*, 494–500.

Boxofficemojo.com. (2012). *All time box office*. Retrieved July 9, 2012, from http://boxofficemojo.com/alltime/world/.

Chaudhuri, S. (2006). From best seller to blockbuster. *Forbes* (November 12). Retrieved July 9, 2012, from http://www.forbes.com/2006/12/08/successful-film-adaptations-tech-media_cz_sc_books06_1208moviebook.html.

Chen, Y., Wang, Q., & Xie, J. (2011). Online social interactions: A natural experiment on word of mouth versus observational learning. *Journal of Marketing Research, 48*, 238–254.

Chevalier, J. A., & Mayzlin, D. (2006). The effect of word of mouth on sales: Online book reviews. *Journal of Marketing Research, 43*, 345–354.

Dias, S., & Ryals, L. (2002). Options theory and options thinking in valuing returns on brand investments and brand extensions. *The Journal of Product and Brand Management, 11*, 115–128.

Elberse, A., & Anand, B. (2007). The effectiveness of pre-release advertising for motion pictures: An empirical investigation using a simulated market. *Information Economics and Policy, 19*, 319–343.

Elberse, A., & Eliashberg, J. (2003). Demand and supply dynamics for sequentially released products in international markets: The case of motion pictures. *Marketing Science, 22*, 329–354.

Erdem, T., & Sun, B. (2002). An empirical investigation of the spillover effects of advertising and sales promotions in umbrella branding. *Journal of Marketing Research, 39*, 408–420.

Feldman, J. M., & Lynch, J. G. (1988). Self-generated validity and other effects of measurement on belief, attitude, intention, and behavior. *Journal of Applied Psychology, 73*, 421–435.

Goldman, W. (1983). *Adventures in the screen trade*. New York: Warner Books.

Hendricks, K., & Sorensen, A. (2009). Information and the skewness of music sales. *Journal of Political Economy, 117*, 324–369.

Hennig-Thurau, T., Houston, M. B., & Heitjans, T. (2009). Conceptualizing and measuring the monetary value of brand extensions: The case of motion pictures. *Journal of Marketing, 73*, 167–183.

Hennig-Thurau, T., Houston, M. B., & Walsh, G. (2006). The differing roles of success drivers across sequential channels: An application to the motion picture industry. *Journal of the Academy of Marketing Science, 34*, 559–575.

Hirschman, E. C., & Holbrook, M. B. (1982). Hedonic consumption: Emerging concepts, methods and propositions. *Journal of Marketing, 46*, 92–101.

Ho, J. Y. C., Dhar, T., & Weinberg, C. B. (2009). Playoff payoff: Super Bowl advertising for movies. *International Journal of Research in Marketing, 26*, 168–179.

Inman, J. J. (2001). The role of sensory-specific satiety in attribute-level variety seeking. *Journal of Consumer Research, 28*, 105–120.

Jenny, U. (2006). Perfume the film: Worth the wait? *Spiegel Online* (September 8). Retrieved July 9, 2012, from http://www.spiegel.de/international/spiegel/perfume-the-film-worth-the-wait-a-435918.html.

Joshi, A., & Mao, H. (2012). Adapting to succeed? Leveraging the brand equity of best sellers to succeed at the box office. *Journal of the Academy of Marketing Science, 40*, 558–571.

Keller, K. L., & Aaker, D. A. (1992). The effects of sequential introduction of brand extensions. *Journal of Marketing Research, 29*, 35–50.

Lance, C. E. (1988). Residual centering, exploratory and confirmatory moderator analysis, and decomposition of effects in path models

containing interactions. *Applied Psychological Measurement, 12*, 163–175.

Lane, V., & Jacobson, R. (1995). Stock market reactions to brand extension announcements: the effects of brand attitude and familiarity. *Journal of Marketing, 59*, 63–77.

Luan, Y. J., & Sudhir, K. (2010). Forecasting marketing-mix responsiveness for new products. *Journal of Marketing Research, 47*, 444–457.

Martinez, E., Montaner, T., & Pina, J. M. (2009). Brand extension feedback: The role of advertising. *Journal of Business Research, 62*, 305–313.

Meyvis, T., & Janiszewski, C. (2004). When are broader brands stronger brands? An accessibility perspective on the success of brand extensions. *Journal of Consumer Research, 31*, 346–357.

Miniard, P. W., Sirdeshmukh, D., & Innis, D. E. (1992). Peripheral persuasion and brand choice. *Journal of Consumer Research, 19*, 226–239.

Minzesheimer, B. (2004). 10 years of best sellers: How the landscape has changed. *USA Today* (March 10). Retrieved July 9, 2012, from http://usatoday30.usatoday.com/life/books/news/2004-03-10-bookslist-decade-main_x.htm.

Newsweek. (1996). Hollywood's dying for novel ideas. *Newsweek* (December 8). Retrieved July 9, 2012, from http://www.thedailybeast.com/newsweek/1996/12/09/hollywood-s-dying-for-novel-ideas.html.

Redden, J. P. (2008). Reducing satiation: The role of categorization level. *Journal of Consumer Research, 34*, 624–634.

Simon, C. J., & Sullivan, M. W. (1993). The measurement and determinants of brand equity: a financial approach. *Marketing Science, 12*, 28–52.

Smith, D. C., & Park, C. W. (1992). The effects of brand extensions on market share and advertising efficiency. *Journal of Marketing Research, 29*, 296–313.

Sood, S., & Drèze, X. (2006). Brand extensions of experiential goods: Movie sequel evaluations. *Journal of Consumer Research, 33*, 352–360.

Sullivan, M. (1990). Measuring image spillovers in umbrella-branded products. *Journal of Business, 63*, 309–329.

Swaminathan, V., Fox, R. J., & Reddy, S. K. (2001). The impact of brand extension introduction on choice. *Journal of Marketing, 65*, 1–15.

Swaminathan, V. (2003). Sequential brand extensions and brand choice behavior. *Journal of Business Research, 56*, 431–442.

USA Today (2012). About the best-selling books list. *USA Today.* Retrieved November 29, 2012, from http://usatoday30.usatoday.com/life/books/booksdatabase/2011-05-11-about-usa-todays-top-150-books-list_n.htm.

Young, S. M., Gong, J. J., & Van der Steede, W. A. (2008). The business of making movies. *Strategic Finance, 89*, 26–32.