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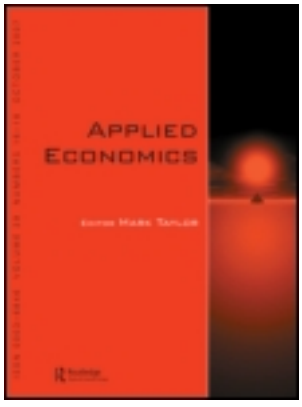


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# Advertising media strategies in the film industry

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The primary aim of this article is to estimate the multiple determinants of film advertising expenditures in four important media, namely television, press, outdoor and radio, in the UK. First, television advertising, the leading film advertising medium, is examined as part of a system of equations, capturing the interdependences between advertising, the number of screens on which films are initially shown and box office revenues. Then a reduced form model is put forward to reveal the determinants of film advertising in the four media. While major distribution companies have different preferences for the use of the alternative advertising media, results highlight the importance of quality signals, such as critical reviews, in determining advertising expenditures in the film industry. Moreover, advertising expenditures can themselves be considered to offer potential cinema goers signals of film quality.

## I. Introduction

The film industry remains important as well as high profile. Cinema attendance appears buoyant in many countries, for example with cinema admissions rising in the UK over the previous decade, and 164 million visits recorded for 2008 alone (UK Film Council Statistical Yearbook 2009). An increasing number of academic papers have investigated the factors contributing to film box office success. Influential recent studies of the factors contributing to the US box office success include those of De Vany and Walls (1999), Ravid (1999), Reinstein and Snyder (2005), Chang and Ki (2005) and Brewer *et al*. (2009). The latter paper omits advertising as a determinant of the US box office revenues.

Analyses of the UK film box office success include Collins *et al*. (2002) and Elliott and Simmons (2008), with a limited number of cross-country analyses also being available, such as Elberse and Eliashberg (2003). A subset of papers examines the impact of total advertising on film revenues (Prag and Casavant, 1994; Elberse and Eliashberg, 2003; Hennig-Thurau *et al*., 2006; Elliott and Simmons, 2008). Each of these papers concludes that aggregate advertising can have a positive, significant impact on box office revenues.

Film distribution companies use a variety of different advertising media to promote films, and so far the empirical literature has not explored the determinants of expenditures in these different advertising media. Similarly, the impacts of advertising in different media on film box office revenues remain unexplored. In this regard, this article offers novel contributions to the film industry literature. Our dataset is believed to be unique as it not only contains a large number of films compared to many studies, but advertising expenditures are also disaggregated to the advertising media level. Thus, we are able to investigate the factors determining film advertising expenditures in each of four different advertising media, a question not yet addressed in the literature

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mainly due to the high cost of obtaining suitable data from private sources. Further, a three-equation system that captures the interdependences between television advertising expenditures, the choice of the number of screens on which to release a film in the UK and the UK box office film revenues is presented to facilitate understanding of the market in which the film advertising expenditures are made.

In this structural model, we shall treat the largest component of film advertising, television, as endogenous in order to show the impact of expenditure on this form of advertising on the UK box office revenues.

It is relevant to understand the process by which films are released in the UK. Advertising expenditure is financed by distributors, and not by producers directly or by exhibitors. The distribution sector is dominated by a number of studios, with a competitive fringe of independents. Exhibition is dominated by a small number of nationwide cinema chains, such as Odeon and Vue, which will usually book the same films for exhibition across their screens. These screens are placed in multiplex cinemas and bigger films will occupy several screens. Distributors will approach exhibitors with a slate of films, which will vary in budget and potential consumer appeal. By the UK law, an initial contract between the distributor and exhibitor for screening of a film can only last 2 weeks. During these first 2 weeks, the distributor will seek to persuade the exhibitors that their films deserve an extended release. Prior to release, much advertising expenditure will already have been incurred, as billboards have to be prepared and television advertising slots have to be booked. But during initial release, distributors can raise their advertising expenditures on particularly promising films so as to encourage audience demand and hopefully secure an extended release. The first two weeks of release are therefore vital for the success of a film, as exhibitors assess whether a film 'has legs' in industry parlance. The purpose of film advertising is then two-fold: to raise consumer awareness of films directly, and also to secure an extended release in the exhibition network. Therefore, cinema advertising has both supply-side and demand-side effects.

The remainder of this article is structured as follows. In Section II, variables under consideration and data sources are first outlined, and the empirical methodology is then shown. Results are then discussed in Section III, highlighting the determinants of film advertising expenditures in different media, as well as the impacts of television advertising expenditures and other factors on the UK film box office success. Conclusions are presented in Section IV.

## II. Data and Research Methodology

### *Data collection*

Nielsen Media Research provided total amounts spent in the UK on each of the four categories of advertising by film and year between 1999 and 2003. These categories are television, press, outdoor (poster campaigns) and radio. Care was taken to remove films for which advertising expenditure occurred in 1998 and 2004, to avoid censoring of the data. As is common in the analyses of the impact of advertising on box office revenues, values were expressed in log values at constant prices; zero values were inserted where no advertising spending occurred. The resulting variables are denoted by *log TV*, *log outdoor*, *log press* and *log radio* and this sequence is also the ranking of conditional mean values of advertising. As in the US, television advertising is both the most expensive medium and the category attracting greatest expenditure (Elberse and Anand, 2007).

Our statistical analysis examines advertising expenditure over the life of a film as we lack week-by-week advertising data. A number of explanatory variables were considered in the structural model of the UK box office revenues, advertising expenditures and number of screens. These variables reappear in the reduced form model of film advertising expenditures across the different media. Data on the number of screens on which films are shown in their opening week of release were obtained from the Internet Movie Database (www.imdb.com). This database also provided details of film budget (which comprises all production and public relations expenses incurred by production companies but not advertising expenditures), revenues, genre, certificate (namely U, PG, 12, 15 and 18) and distribution company. The distribution sector is dominated by a small number of major studios, namely Buena Vista, Columbia Tristar, Paramount, 20th Century Fox, Universal International Pictures and Warner. Hence, we can show whether these distribution companies are associated with different strategies for releasing films and advertising films in the various media commonly used. A dummy variable *ukmajor* is also introduced, taking the value unity when a UK film is distributed by one of these major studios, to identify any benefit to the UK films of being distributed by one of these companies. Family-orientated U certificate films are identified by a dummy variable *certU*. These films are sometimes marketed differently to other films with product tie-ins, and film ticket sales benefit from children viewing the films accompanied by adults.

The majority of films are still released in the US prior to their UK release. Distribution companies then have the opportunity to discover how successful a film is at the US box office prior to selecting the UK advertising strategies and expenditures. Consequently, we allow advertising expenditures to depend on log US opening weekend revenue, *lusopen*. If no US opening revenue is reported or the US opening follows or is simultaneous to the UK opening, a zero value is inserted. This essentially creates a slope dummy for films that open in the US before the UK. Films that have a long release gap between the US and the UK may be deliberately held back by distributors and exhibitors as these are unlikely to be successful. Presumably, any favourable momentum from strong US box office performance is dissipated as the UK release is delayed. Rational audiences can spot long release gaps and may regard these films as inferior in quality. Conversely, a film that opens strongly in the US can benefit from enhanced publicity when it opens quickly in the UK.

It appears that, on average, gaps in release date are shortening over time and more use is now made of simultaneous release (with 36 such films in our sample). Industry sources claim that a quicker release strategy is designed to combat piracy but we suspect management of publicity is also a relevant factor. Consequently, we include an explanatory variable that is a simple count of the number of weeks between the US and UK release (*wks diff*), and can identify if films delayed for the UK release are advertised differently. A dummy variable *simrelease* is included, taking the value unity if a film is released simultaneously in the UK and the US, and we also create a variable, *sameopeningcount*, of the number of other films in the dataset, released in the same week. Film release dates are announced in advance, allowing a test of whether advertising expenditures are partly determined by the number of other films released simultaneously.

A dummy variable for appearance of major stars (*starpower*) was derived from the Hollywood Reporter's 2002 ranking of 'A list' actors. Actors were identified from the Maximum Star Power category, based on a survey of Hollywood studio executives of those stars who are deemed to be 'bankable' in terms of securing finance for production, major studio distribution and additional opening box office revenues. The 14 actors included in the top category are Tom Cruise, Tom Hanks, Julia Roberts, Mel Gibson, Jim Carrey, George Clooney, Russell Crowe, Harrison Ford, Bruce Willis, Brad Pitt, Nicolas Cage, Leonardo Di Caprio, Will Smith and Denzel Washington. In this article, we wanted to test whether the appearance of such stars impacted upon the advertising media strategies adopted.

Critical reviews have been found by Eliashberg and Shugan (1997), Reinstein and Snyder (2005), Elliott and Simmons (2008) and Brewer *et al*. (2009) to have a significant impact on film box office success in both the US and the UK, and may also impact on film advertising strategies. The UK daily newspapers publish film reviews weekly and a star rating now accompanies each review. *The Guardian* newspaper website, www.guardianunlimited.co.uk collates review scores from several newspapers on a comparative basis with scores from 0 to 10.[1] From this source, an explanatory variable is created, *criticaverage*, of the mean of the critical review score out of 10 for each of the films in the dataset. The daily newspapers surveyed were the *Daily Express*, *Daily Mail, Daily Mirror*, *The Telegraph*, *The Guardian*, *The Independent*, *The Times* and *The Sun*. Note that while reviews were from the week of the UK release, not all films were reviewed by each newspaper. *The Guardian* had the greatest review coverage, with the thinnest from *The Sun*. Review scores have the notable and desirable features that they follow a normal distribution with critics using the full range of scores from 0 to 10. In contrast, consumer online reviews tend to be bunched around particular values (Elliott and Simmons, 2008).

Dummy variables were also created to highlight if a film's release coincided with the summer school holidays or December 1st to 24th inclusive. It may be that film distributors release films that are expected to appeal to family audiences, or audiences with greater leisure time at holiday periods. The existing literature produces conflicting expectations about the expected signs and sizes of the impact of summer and Christmas release dates on box office returns, for example Litman (1983) concluded that a Christmas release has a significant impact on the financial success of a film, although Sochay (1994) concluded that summer is the optimum time to release a film. The aim in this article was to test the effect of releasing films in these periods on the advertising media used to promote the releases, as well as on the box office impact. However, the coefficients on these variables were never significantly different from zero and so the variables were dropped from the analysis and not reported in the discussion below.

[1] The Rotten Tomatoes website, www.rottentomatoes.com, performs a similar function for the US audiences (Brewer *et al*., 2009).

We have a dummy variable for films that represent a *sequel*. Significantly, films nominated for best actor, best actress or best film awards at the British Academy of Film and Television Arts (BAFTA) and/or Oscar ceremonies each spring are represented by a dummy variable, *prize*; 48 such films being identified. It is possible that producers and distributors raise their advertising efforts for films that they perceive will win awards, and if films are nominated for a major award either prior to general release or after initially being released, then advertising expenditures may increase, highlighting the nominations received. Indeed, the mean level of (real) television advertising for films nominated for award is £426 627 compared with £299 291 for nonnominated films. A one-sided *t*-test rejects the null of equality of means ($p$-value = 0.01). A similar *t*-test rejects equality of means of press advertising between nominated and nonnominated films ($p$-value = 0.00). All *t*-tests of differences in sample means permit unequal variance between the two sub-samples.

Note that all monetary values were converted to real sterling at 1996 prices. Ultimately, we found consistent data for 543 films released between 1999 and 2003. See Table A1 in Appendix for a summary of all variables used.

### *Empirical methodology*

Advertising expenditure decisions are part of the many interdependent decisions taken when a film is released. Consequently, initially attention focusses on the most important film advertising medium, television advertising, as part of a system of three equations capturing the interdependences between film advertising, the number of screens on which films are first released and the UK box office revenues. For the sake of brevity, we only report the structural, three-equation model using television film advertising, as this is the medium which attracts the most expenditure. Nevertheless, the results alternatively using press, outdoor or radio advertising in place of television advertising have been confirmed to be comparable.[2] A three-stage least-squares regression method is adopted, with bootstrapped SEs to control for nonnormality of residuals and heteroscedasticity, in the face of a dependent variable – the UK box office revenues, that has been previously confirmed to be nonnormally distributed (Collins *et al.*, 2002).

Our structural model adopts Elliott and Simmons (2008) in setting the UK opening screens, television advertising and gross UK box office revenues as endogenous variables with feedback from television advertising and the UK opening screens on to the UK box office revenue. This model is

$$lukscreens = f(lusopen, lbudget, starpower, prize, \boldsymbol{TYPE}, \boldsymbol{RELEASE}, \boldsymbol{STUDIO}) \quad (1)$$

$$log\,TV = g(\boldsymbol{QUALITY}, \boldsymbol{TYPE}, \boldsymbol{RELEASE}, \boldsymbol{STUDIO}) \quad (2)$$

$$lukrevenue = h(lukscreens, log\,TV, criticaverage, \boldsymbol{TYPE}, \boldsymbol{RELEASE}) \quad (3)$$

The ***QUALITY*** vector comprises *criticaverage*, *lusopen*, *lbudget*, *starpower* and *prize*. The ***TYPE*** vector includes *sequel*, *certU* and a set of genre dummy variables. ***RELEASE*** contains *wks diff*, *sameopeningcount* and *simrelease*. ***STUDIO*** is a set of studio dummy variables.

Model identification was determined partly by prior reasoning and partly by omission of variables with insignificant coefficients. For example, ***STUDIO*** was deemed to affect *lukscreens* and *log TV* (since different studios may have different advertising strategies in terms of the intensity of coverage of particular media and may therefore have different advertising efforts *via* television) but not *lukrevenue*. In addition, identification is facilitated by omission of *criticaverage* from the *lukscreens* equation and its inclusion, with all other ***QUALITY*** variables omitted, in the *lukrevenue* equation. All exclusion restrictions were verified empirically to check that the omitted variables did indeed deliver insignificant coefficients when re-inserted.

It seems likely that decisions regarding film advertising expenditures in different media are not taken independently. Hence, when developing the reduced form advertising media expenditure models, it was reasonable to allow for correlation of the disturbances across advertising media equations. The Seemingly Unrelated Regression Estimation (SURE) method was therefore used to account for both heteroscedasticity and contemporaneous correlation in the errors across equations. Confirmation of the validity of this approach came from the rejection of the null hypothesis of the Breusch–Pagan test for independence of residuals in all the SURE systems of advertising media equations estimated, always at least at a 1% significance level.

## III. Results

### *A structural model of the UK film industry*

Amongst the set of control variables in our structural model, sequels are found to enjoy greater box office

[2] Results are available upon request.

**Table 1. Three-stage least squares estimation: results incorporating *log TV***

| | Dependent variables | | |
|---|---|---|---|
| Variable | *lukscreens* | *log TV* | *lukrevenue* |
| *lukscreens* | | | 0.667 (0.048) |
| *log TV* | | | 0.353 (0.001) |
| ***QUALITY*** | | | |
| *criticaverage* | | 0.062 (0.310) | 0.256 (0.000) |
| *lusopen* | 0.063 (0.000) | 0.225 (0.000) | |
| *lbudget* | 0.178 (0.000) | 0.299 (0.119) | |
| *starpower* | 0.077 (0.333) | 0.735 (0.023) | |
| *prize* | −0.040 (0.768) | 1.594 (0.000) | |
| ***TYPE*** | | | |
| *sequel* | 0.137 (0.028) | −0.177 (0.627) | 0.499 (0.002) |
| *certU* | 0.215 (0.291) | 0.624 (0.263) | 0.450 (0.110) |
| *action* | 0.235 (0.007) | 0.494 (0.243) | 0.206 (0.233) |
| *animation* | 0.073 (0.740) | 0.853 (0.192) | 0.021 (0.945) |
| *comedy* | 0.300 (0.001) | 0.813 (0.055) | 0.157 (0.288) |
| *horror* | 0.412 (0.000) | 1.300 (0.010) | 0.203 (0.299) |
| *romantic comedy* | 0.276 (0.011) | 0.583 (0.246) | 0.105 (0.583) |
| *scifi* | 0.272 (0.020) | 1.114 (0.050) | −0.205 (0.310) |
| *thriller* | 0.094 (0.350) | 0.544 (0.280) | −0.051 (0.775) |
| ***RELEASE*** | | | |
| *wks diff* | −0.017 (0.000) | −0.080 (0.000) | −0.008 (0.213) |
| *sameopeningcount* | −0.040 (0.084) | 0.141 (0.208) | −0.172 (0.003) |
| *simrelease* | 0.025 (0.699) | 0.536 (0.075) | −0.210 (0.211) |
| ***STUDIO*** | | | |
| *ukmajor* | 0.169 (0.212) | | |
| *buenavista* | 0.128 (0.203) | 0.494 (0.108) | |
| *columbia* | 0.157 (0.122) | 0.204 (0.627) | |
| *fox* | 0.210 (0.017) | 0.312 (0.433) | |
| *paramount* | 0.428 (0.002) | 0.531 (0.473) | |
| *warner* | 0.196 (0.015) | 0.380 (0.249) | |
| *universal* | 0.343 (0.001) | 1.241 (0.000) | |
| $R^2$ | 0.423 | 0.280 | 0.548 |
| $N = 543$ | | | |

*Note*: *p*-values in parentheses.



revenues, and films benefit from being released in a week with fewer other films released. Genre of film appears irrelevant for box office success. Regression results are reported in Table 1.

As expected, the UK box office revenues are found to be determined by factors that can be argued to reflect the quality of a film, including newspaper critical review scores and the number of screens that distributors initially negotiate for the release of films. Crucially, television advertising is identified as having a positive, highly significant impact on the UK box office success. Consequently, the attention this article places on understanding factors determining television advertising, and advertising in other media, seems justified. Moreover, the elasticity of the UK gross box office revenue with respect to television advertising is estimated at 0.357. This value, suggesting diminishing returns, is some distance below the unit-elastic value found for total advertising by Elliott and Simmons (2008), using the same dataset as here. This discrepancy suggests that there may be synergies from using multiple advertising media that generate greater returns than can be obtained by using just one advertising vehicle, such as television.

Both television advertising expenditures and the number of screens on which films are released are influenced by a film's prior performance at the US box office, and films that are held back for the UK release after their US release are associated with release on a smaller number of screens, and smaller television advertising expenditures. Meanwhile, sequels and greater film budgets translate into films initially being released onto a greater number of screens in the UK, and major prize nominations positively impact on television advertising expenditures. If a film's UK release follows (or continues after) the announcement of the nominations then additional advertising can highlight to potential

**Table 2. Reduced form, seemingly unrelated regression results for advertising media expenditures**

| | Dependent variables | | | |
|---|---|---|---|---|
| Variable | *log TV* | *log outdoor* | *log press* | *log radio* |
| ***QUALITY*** | | | | |
| *criticaverage* | 0.042 (0.543) | 0.353 (0.005) | 0.237 (0.000) | 0.280 (0.028) |
| *lusopen* | 0.229 (0.000) | 0.024 (0.791) | −0.004 (0.880) | 0.262 (0.002) |
| *lbudget* | 0.383 (0.019) | 0.392 (0.254) | 0.224 (0.154) | −0.259 (0.337) |
| *starpower* | 0.460 (0.213) | 1.727 (0.021) | 0.185 (0.545) | −0.477 (0.500) |
| *prize* | 1.412 (0.000) | 1.352 (0.153) | 0.759 (0.000) | 1.026 (0.200) |
| ***TYPE*** | | | | |
| *sequel* | −0.223 (0.550) | 0.487 (0.635) | −0.409 (0.445) | −0.567 (0.474) |
| *certU* | 0.676 (0.215) | 1.549 (0.233) | 0.031 (0.959) | −1.032 (0.314) |
| *action* | 0.386 (0.354) | 1.241 (0.171) | 0.031 (0.927) | −0.098 (0.894) |
| *animation* | 0.703 (0.293) | 2.187 (0.169) | −0.757 (0.270) | 0.587 (0.598) |
| *comedy* | 0.713 (0.111) | 0.071 (0.926) | −0.060 (0.853) | 0.888 (0.178) |
| *horror* | 1.184 (0.022) | 1.733 (0.083) | 0.309 (0.426) | 1.354 (0.113) |
| *romantic comedy* | 0.516 (0.339) | 1.403 (0.171) | 0.222 (0.533) | 1.179 (0.145) |
| *scifi* | 0.902 (0.121) | 1.630 (0.196) | 0.234 (0.525) | −2.143 (0.031) |
| *thriller* | 0.391 (0.419) | 0.370 (0.701) | −0.366 (0.389) | 0.264 (0.758) |
| ***RELEASE*** | | | | |
| *wks diff* | −0.082 (0.000) | −0.129 (0.000) | −0.062 (0.000) | −0.082 (0.000) |
| *sameopeningcount* | 0.137 (0.287) | −0.237 (0.328) | 0.208 (0.049) | −0.233 (0.232) |
| *simrelease* | 0.459 (0.104) | 2.893 (0.018) | 0.462 (0.225) | 1.372 (0.078) |
| ***STUDIO*** | | | | |
| *buenavista* | 0.278 (0.469) | −1.404 (0.080) | 0.092 (0.745) | 3.069 (0.000) |
| *columbia* | −0.021 (0.965) | −2.428 (0.002) | −0.131 (0.749) | 1.895 (0.011) |
| *fox* | 0.395 (0.356) | −1.432 (0.083) | 1.109 (0.000) | 0.862 (0.193) |
| *paramount* | 0.513 (0.577) | −4.132 (0.015) | −0.545 (0.635) | −0.864 (0.595) |
| *warner* | 0.338 (0.304) | −1.489 (0.067) | −0.461 (0.187) | 0.894 (0.247) |
| *universal* | 1.138 (0.002) | −3.489 (0.000) | 0.652 (0.016) | 0.108 (0.889) |
| $R^2$ | 0.283 | 0.225 | 0.234 | 0.168 |
| $N = 543$ | | | | |

*Note*: *p*-values in parentheses.



audiences any nominations and prizes. Alternatively, if a film is released prior to the announcement of BAFTA and Oscar nominations, a higher advertising expenditure may signal a distribution company's confidence in a film's quality. The theory that advertising can indirectly signal quality being first put forward by Nelson (1974).

### *Determinants of film advertising in four advertising media*

The primary aim of this article is to gain a deeper appreciation of the factors determining film advertising strategies, by focussing on the determinants of advertising expenditure in the predominant four media. The regressions for logged advertising expenditure in each advertising medium included identical sets of explanatory variables to those that were used in the television advertising equation of the structural model of the UK film industry. Table 2 summarizes the SURE regression results. Note that while the coefficients of determination in the reduced form regressions are relatively low, this was expected and partly a consequence of the number of zero advertising expenditures in the less commonly used advertising media.

The SURE regression results highlight the different factors affecting film advertising expenditures in the four media. Higher critical review scores are associated with greater press, outdoor and radio advertising, but not television advertising, reflecting the need to pre-book television advertising slots prior to publication of newspaper reviews. There are also noticeable differences between the major distribution companies in their choices of film advertising media. Major prize nominations are associated with greater television and press advertising, but not outdoor and radio advertising, while the US box office success is associated with greater investment in the UK broadcast, television and radio and advertising. Higher film budgets are also associated with greater expenditure on television advertising, the most expensive advertising medium.

It is particularly noteworthy that critical reviews, major prize nominations, prior the US box office

success and film budget may all be considered signals of film quality. Films are experience goods, for which potential cinema goers do not have perfect information prior to viewing a film. If film companies' advertising media expenditures reflect aspects of film quality, then consumers can consider advertising expenditures to be a signal of quality. However, as the results in Table 2 indicate, elements of film quality impact on advertising expenditures in different media to varying extents. As consumers are likely to lack information on advertising expenditures in different media anyway, advertising expenditures aggregated across media may be a good, if imperfect, indication of film quality.

Some of our variables show insignificant effects on advertising. Film genre appears to have little impact on advertising media choice. Advertising does not respond significantly to a film's status as a sequel or to a certificate U film.

Other factors do have significant impacts on each of the advertising media. A smaller gap between the US and UK release dates of films can be argued to be another possible signal of film quality, with films performing poorly in the US market delayed for the UK release. These films are associated with significantly smaller advertising expenditures in each of the media considered, further supporting the argument above that greater advertising expenditures can be considered a signal of film quality. Moreover, our results show that distributors do not attempt to offset poor prior the US box office performance for films released later in the UK by means of heavier advertising promotion, designed to persuade potential film goers of the merits of these failing films. Instead, distributors allocate higher advertising spending to some or all of the media on films with stronger US box office opening revenues. In this way, the UK film industry tends to back 'winners' rather than 'losers' in its advertising allocation policy.

## IV. Conclusions

The primary contribution of this article to the literature on the economics of the film industry is to look more closely at the determinants of advertising strategies used to promote films released in the UK. To appreciate the importance of advertising, television advertising, the leading form of film advertising in both the US and the UK, is modelled as part of a system of three equations, highlighting the interdependences between film advertising *via* television, the number of opening screens on which films are released and the UK gross box office revenues. Then, the SURE regression method was used to identify factors influencing the use of four advertising media, namely television, outdoor, press and radio advertising.

There are differences in the strategies of the major distribution companies, but we show that expenditure on different types of advertising media for films is not arbitrary. Specifically, distributors use advertising to back 'winners' with greater advertising effort to films that have performed strongly at the US box office and which have been released in the UK quickly after their US opening, in order to capture a momentum in audience interest. To varying extents for the different advertising media considered, distributors use information on critical reviews, major prize nominations, the US box office success and the often corresponding lag between the US and UK film release dates to determine advertising strategies across advertising media. In particular, television advertising, as the largest category of spending, responds to a number of quality signals including Oscar nominations and prior opening box office revenues in the US. This suggests an element of rationality in the advertising decision. Distributors devote less advertising effort to films that have performed poorly at the US box office and which have delayed release compared with the US perhaps because to do otherwise will not lead to payoffs at the UK box office. Consumers would not be likely to respond positively to an offsetting strategy designed to counter indications of failure. Furthermore, given broadly rational behaviour by distributors in their advertising strategies, consumers may also consider advertising to be itself a signal of quality for films, recalling that these are experience goods for which consumers cannot have perfect knowledge prior to viewing.

A more recent development is the use of the Internet to offer both advertising opportunities and quicker word-of-mouth responses to perceived film quality. As Internet advertising in general, and for films specifically, becomes increasingly important, then future research should be extended to examine the factors determining expenditure on the online advertising of films and the responses of spending on traditional advertising media to online opinions of film quality, which augment the set of quality signals analysed in this study.

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## Appendix

**Table A1. Complete list of variables**

| Variable | Description |
|---|---|
| *lukscreens* | Logged number of opening week screens |
| *log TV; log outdoor; log press; log radio* | Logged advertising expenditures |
| *lukrevenue* | Logged UK film box office revenue |
| *lbudget* | Logged total production budget |
| *lusopen* | Logged US opening week revenue |
| *wks diff* | Lag in weeks between the US and UK release |
| *sameopeningcount* | Number of dataset films released simultaneously |
| *criticaverage* | Mean film review score of eight UK newspapers |
| Genre dummies: *action; animation; comedy; romantic comedy; horror; scifi; thriller* | Dramas were considered the base category and so omitted from regressions |
| Major distribution company dummies: *buenavista; columbia; fox; paramount; universal; warner* | |
| Further dummies: *starpower* | Takes the value unity if a film's actors contain at least one of 14 high profile actors |
| *certU* | Unity if a film is classified as having a U certificate |
| *simrelease* | Unity if a film is released simultaneously in the US and the UK |
| *ukmajor* | Unity if a UK film was distributed by a major distribution company |
| *sequel* | Unity if a film is a sequel |
| *prize* | Unity if a film is nominated for a major BAFTA/Oscar |