

**DO MOVIE MAJORS REALLY COLLUDE? INDIRECT  
EVIDENCE FROM RELEASE SCHEDULES**

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## DO MOVIE MAJORS REALLY COLLUDE? INDIRECT EVIDENCE FROM RELEASE SCHEDULES

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### Abstract

Major Hollywood motion picture studios have a dominant market share in the main international movie markets, but their competitive behavior has come under suspicion. In 2006, the Spanish Competition Court fined these Major Distributors for anticompetitive practices. The aim of this paper is to evaluate the presence (or absence) of collusive behavior among the Major Distributors during the 2002-2009 period. Because the release date of a movie is a critical variable of competition, we test whether Major Distributors are coordinating their release schedules by employing a reduced-type model in which the distance between a pair of films that are released in the same "theater demand window" is regressed on a set of variables that are likely to affect distributors' release schedules. In general, our results suggest that Major Distributors achieve a larger degree of coordination in their release schedules than other distributors in the Spanish motion picture market.

**Keywords:** temporal competition, movie exhibition, collusion.

**Classification JEL:** L41, Z10

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“People of the same trade seldom meet together, even for merriment and diversion, but the conversation ends in a conspiracy against the public, or in some contrivance to raise prices.”

Adam Smith

*An Inquiry into the Nature and Causes of the Wealth of Nations* (Book I, Chapter X, Part II)

## 1. Introduction

One of the most salient features of the Spanish film market is the great power that is wielded by the local distributors that are linked to the Hollywood major motion picture studios<sup>1</sup> (Major Distributors). Since the 1990s, these Major Distributors have dominated the Spanish theatrical motion picture market, and they have shifted among the leading positions during this time. On average, these firms have represented more than two-thirds of box office revenues and have distributed most of the international blockbusters; in recent years, they have also distributed most of the Spanish blockbusters. Their market dominance might indicate that they are engaging in anticompetitive practices to the detriment of other distributors. Indeed, the Spanish Competition Court (SCC) resolved in May 2006 to fine these Major Distributors 2.4 million euros for standardizing the exhibition conditions of their films, which results in both horizontal and vertical restrictions on competition. The SCC resolution is clear that "from dates [...] previous [...] to 1998, the implicated distribution companies have been using similar conditions in their contracts with exhibitors to show their films. They always make temporary rental contracts and set identical or similar conditions in such important aspects as payment systems, pricing, billing, revenue control, film advertising, theater selection (number of screens), exhibition time and delivery, and return of copies" (see #5 in the Proven Facts Section of the Resolution of the Spanish Competition Court, 2006). The SCC also fined the Spanish Film Distributors Federation

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<sup>1</sup> By the “Hollywood Majors”, we refer to the following companies: Disney, Fox, Sony, Warner Bros. and UIP/Paramount/Universal.

(FEDICINE) because it was accustomed to exchanging strategic data relevant to the competition and facilitating the coordination between distributors.

It is notable that all the distributors charged in this resolution established the same rental price for their blockbuster movies, which is a percentage of box office revenues. The SCC attributed this similarity to the absence of competition between distributors when films' release dates are chosen.<sup>2</sup> A film's release date is a critical variable of competition; thus, distributors might be interested in coordinating release schedules to avoid such competition. Thus, the SCC stated that if distributors had competed against one another, the possibility of two releases from Major Distributors coinciding on the same day would have led them to negotiate lower prices with exhibitors to achieve greater distribution in theaters. However, this reduction in price can hardly occur if the distributors coordinate with their competitors by alternating and/or separating the releases of their films. Accordingly, because coordinating release schedules weakens the negotiating position of exhibitors<sup>3</sup>, the ability of exhibitors to provide better services and prices to customers is clearly limited and customers' alternatives are reduced. Moreover, release-coordinating agreements might also hinder market access for other distributors.

The purpose of this paper is to shed light on the presence of (temporal) collusive behavior among Major Distributors in the Spanish film market during the 2002-2009 period.<sup>4</sup> Thus, this study complements one of the main arguments used by the SCC to fine the Major Distributors, as we test whether these Major

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<sup>2</sup> In addition, and according to the SCC, the determination of the same rental price cannot be caused by common cost structures because films' production and advertising costs vary considerably because motion pictures are highly differentiated products. Furthermore, distributors do not have identical operating costs, and the box office revenues of each of their films cannot be predicted with certainty.

<sup>3</sup> Indeed, the film market in Spain is characterized by asymmetry in negotiation between the exhibitors and Major Distributors. Whereas exhibitors are mainly local, the Major Distributors are integrated with the U.S. distributors that own the most popular films and commercially exploit these films nationally and globally. Because of this asymmetry, Spanish distributors can operate profitably without a particular exhibitor or exhibitors in Spain, whereas exhibitors can hardly stay in business without the Major Distributors.

<sup>4</sup> The implications of contracts between distributors and exhibitors in the Spanish film market have been addressed by Gil (2009, 2013).

Distributors have been more able to alternate and/or separate their releases than other distributors. Thus, each Major Distributor would attempt to avoid the negative effects on its box-office revenues resulting from the releases of other Major Distributors.<sup>5</sup> To achieve this objective, we estimate a reduced-type model to examine the determinants of the temporal distance between the releases of any two films that have been released in a certain temporal segment or "theater demand window".<sup>6</sup> This empirical strategy, which is based on temporal windows, was first used by Corts (2001) in his study on the effects of a vertical market structure on competition in the U.S. film industry. Here, we adapt this framework to our dataset and extend it in two ways: we use a statistical and flexible procedure to define market segments (whereas Corts (2001) uses ad hoc criteria to define temporal windows), and we define a relative measure of the temporal distance between the releases of any two films that takes the optimal equilibrium of the spatial competition model of Hotelling (1929) as its benchmark. To the best of our knowledge, our study is the first to use a relative measure of competition among movies.

Our paper brings together two different frameworks. First, it is inspired by the studies on detecting collusive practices, and we have chosen one of the most popular procedures: to compare potential colluders' behavior with a competitive benchmark (Harrington, 2005). Second, this paper is connected to empirical studies on spatial or temporal product differentiation analysis that use reduced-form models, which has also been our approach. For instance, using the same empirical strategy as Corts (2001), Osashi (2005) analyzes the temporal distance between two launches in the U.S. video game industry. Borenstein and Netz (1999) examine the scheduling of flight departure times in the airline industry in an

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<sup>5</sup> The effects of the release schedules on the movie industry have been analyzed, for instance, in Gutiérrez-Navratil, Fernández-Blanco, Orea & Prieto-Rodríguez (2013).

<sup>6</sup> An alternative to this type of model is estimating a structural model of release-date scheduling – which is a difficult task because release decisions are discrete and films are not homogenous. Modeling decisions when both features are present is a complex undertaking, which is most likely why there are only a few studies that have attempted to model the time competition among asymmetric agents. See Einav (2010) for a survey of this literature and the restrictions and assumptions that are often used to estimate this type of model.

attempt to provide insight into the incentives that encourage companies to minimize or maximize differentiation and to either “steal” customers from competitors or reduce price competition, respectively. Salvanes et al. (2005) use a similar approach to empirically test the degree of departure-time differentiation in the Norwegian airline industry, and Netz and Taylor (2002) empirically test the locations of petrol stations in the Los Angeles Basin with the same approach.

In the next section, we describe our procedure to detect collusion, analyze the role of release dates as a strategic variable and explain the methodology that was applied to identify the demand windows. In Section 3, we describe the steps we followed to build the sample and define the empirical specifications of the model. In Section 4, we describe the method of estimation and present the most relevant results. The final section concludes.

## **2. A reduced-form model of distributors’ release schedules**

Economic analyses of prices, market shares, and other economic data have often been used to uncover prosecutable cases of collusion<sup>7</sup>. One of the most popular methods of detecting collusion involves asking the following question: “Does the behavior of suspected colluding firms differ from that of competitive firms?” (Harrington 2005, p. 5). This method involves comparing the behavior of suspected colluders with a competitive benchmark that is defined by non-colluding firms. A common implementation of this approach is to estimate *reduced-form price equations* by regressing the price on the demand and cost factors. These price equations are estimated separately for suspected cartel members and competitive firms to test whether they differ on a statistical basis; if they are shown to differ, then colluding firms might be acting in a manner consistent with a collusive model. For instance, this approach was used by Porter and Zona (1993, 1999) to detect collusive behavior in highway construction contracts and school milk procurement, respectively. In both cases, the studies concluded that the bids of cartel firms differ on a statistical basis from the bids of competitive firms.

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<sup>7</sup> For a survey of this literature, see Harrington (2005) and Davis and Garcés (2010).

Because the SCC only fined five of the distributors in Spain, differences in performance should be expected between both sets of distributors, i.e., penalized distributors and distributors that were not penalized. Thus, the degree of competition in the Spanish film market can be tested by estimating reduced-form models.<sup>8</sup> However, unlike most papers on detecting collusion, our dependent variable is not the rental price determined by distributors, but the release date of a film.

The optimal exploitation of a film depends on its release date, which should avoid competition with close substitutes and find periods of high demand (see De Vany & Walls, 1997; and Gutiérrez-Navratil *et al.*, 2013). Indeed, a movie's performance in the first weekend is critical to its entire commercial life<sup>9</sup>; additionally, the weekly revenue of a film decreases exponentially over time as new films enter the exhibition market and the value of the film declines. Thus, a film can collect between 60% and 70% of its total revenue during its first three weeks (see Krider & Weinberg 1998 and Krider, Li, Liu & Weinberg 2005). Consequently, the overlapping timing of release may have important negative effects on revenues. Second, because cinema demand is highly variable throughout the year (with large peaks at holidays, for example), blockbusters tend to have their releases concentrated in high-demand periods because distributors know that one month's revenues during these periods can produce box office sales that are equal to several months' revenues in low-demand periods (see Radas & Shugan, 1998; Moul & Shugan, 2005 and Vogel, 2007). For these reasons, the release date of a film is a particularly important variable for its distributor to maximize the film's box office revenues. This fact was recognized by the distributors that were fined by the SCC. For example, Fox noted that one criterion for choosing the release date is that no similar film will be released on the same date. UIP claimed that competition

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<sup>8</sup> An alternative approach to identifying collusion is to search for a structural break in firms' behavior. Such a break could be associated with the formation of a cartel, but also with a cartel's death. In both cases, there should be a discrete change in the behavior of a group of firms, but this was not the case in the Spanish movie market from 2002 to 2009.

<sup>9</sup> For instance, a good performance during the first weekend might create a positive word-of-mouth effect and capture the attention of the public, the media and exhibitors (De Vany & Walls, 1999).



among Major Distributors is particularly focused on obtaining the best theaters on the release dates of their films (see the Resolution of the SCC, 2006, p. 13).

We must define a proper measure of the release date of a film, which is our strategic variable, and we initially follow the approach proposed by Corts (2001) in his study of the U.S. film industry. Instead of specific dates, this author suggests to using the (absolute) temporal distance between any two releases as the dependent variable. Therefore, our empirical research focuses on pairs of films. The model that must be separately estimated for each group of distributors can be written as follows:

$$GAP_{i,w} = \alpha + \beta x_i + \alpha_w + \epsilon_{i,w} \quad (1)$$

where the subscript  $i$  represents a pair of films that have been released in theater demand window  $w$ ,  $GAP_i$  is a relative measure of the temporal distance that separates the release of the two films,<sup>10</sup> and  $\epsilon_{i,w}$  is the error term. The window-specific effects  $\alpha_w$  capture the unobserved window-specific heterogeneities, such as the presence of holidays or the seasonality of overall demand (see Einav, 2007). Thus, equation (1) can be estimated using panel data techniques. The set of explanatory variables  $x_i$  includes characteristics of both films (e.g., their genres, nationalities, age ratings, awards, or the presence of national or foreign stars) that might influence distributors' release-date decisions. Once we have controlled for these characteristics, the coefficient  $\alpha$  will give the average distance between the release dates of any two films. Because  $\alpha$  is a conditional average, unobserved differences in distributors' performance should be captured by the coefficient. Additionally, by determining whether the genre, the rating or any other relevant movie feature is significant, we will be able to examine whether a criterion for choosing release dates involves ensuring that no similar film will be released on the same date, as Fox indicated to the SCC.

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<sup>10</sup> Our GAP variable can be interpreted as a measure of product differentiation, as in Borenstein & Netz (1999) in their study of airline markets and as in Netz & Taylor (2002) in their study of gas station locations.

However, the most important hypothesis from the point of view of competition involves evaluating the differences in distributor performances. Verifying whether  $\alpha$  differs between suspected cartel members and non-colluding firms allows us to provide additional evidence to corroborate or refute the arguments used by the SCC in fining the Major Distributors for anti-competitive practices. More specifically, we will test whether these distributors have altered the temporal distances that separate their releases by avoiding overlaps and changing their release dates. If this distance increases considerably for pairs of films that belongs to the alleged cartel (relative to the remaining pairs of films), then it might be argued that these distributors have arranged the release dates to maximize their box office revenues. Attempting to limit competition from other distributors by advertising or fixing release dates is lawful and sometimes achievable; this is particularly true when firms have highly differentiated products. However, agreements between different firms to limit the competition between them are dishonest and typically illegal. Therefore, although it is legitimate (and feasible) for a particular distributor to space its releases to minimize the possibility that a film steals revenues from other films that belong to the same distributor, this process is illegal when it is undertaken by coordinating with competing distributors.

To estimate equation (1), we must define the relevant temporal market, i.e., the set of films that will be combined in pairs. One option is to match all the films that are released throughout the entire period analyzed in our study. However, not all of the possible combinations are equally relevant. Because most of a film's revenues are generated during its first three weeks on the market, closer release dates have greater negative effects on the box office revenues of each pair of films (see Gutiérrez-Navratil *et al.*, 2013). Furthermore, if we combine all of the films, we will be implicitly assuming that each film is a potential competitor of every other film, regardless of the distance between their releases. To avoid this assumption, we follow the approach of "theater demand windows" proposed by Corts (2001) and divide the analyzed period into different subperiods or "demand windows". We only take into account those pairs of films that actually compete with one another, i.e., movies that are released in the same demand window.

To build the demand windows, we account for the seasonality of demand in the motion picture industry. First, we identify the peaks and valleys of average weekly box office revenues from 2002 to 2009, and we assume that surrounding a high demand peak, each window begins in one valley and ends in another valley and that the pattern does not change over time. When a distributor fixes the release date of a film, the effect that this film might have on the seasonality of movie demand is unknown. Therefore, the release-date decision must be made on the basis of structural and temporal market segmentation, which is well known by all Spanish distributors. We use an annual average of weekly box office revenues as a proxy for this traditional segmentation and the Moving Average Convergence Divergence (MACD) statistical indicator to detect significant peaks and valleys; the MACD is commonly used to interpret stock market trends and generate buying and selling alert signals (see Fernandez-Blanco et al., 2008).

The above-mentioned statistical indicator predicts changes within a trend and generates signals where significant valleys and peaks begin.<sup>11</sup> The proposed methodology allows us to obtain demand windows of different sizes that depend on the observed seasonality of average demand in the sector. Moreover, our empirical strategy to identify demand windows is related to the first of the two methods proposed by Corts (2001). However, we use statistical techniques to identify relevant subperiods or windows, whereas the demand windows devised by Corts (2001) were selected based on external information and an *ad hoc* criterion. The second approach proposed by Corts (2001) identified windows by selecting several key dates (such as Christmas Day, the return of the summer holidays, the Oscars, and the beginning of Easter) and constructing five-week-long windows that were centered on these important dates that did not take any other weeks into account.

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<sup>11</sup> A significant peak is identified when the MACD line intersects its moving average line (signal) in ascending order. On the contrary, signals that identify a valley occur when the MACD line intersects its moving average (signal) in descending order. The MACD line is formed by subtracting the short moving average from the long moving average; we calculate it as  $MACD = EMA_8 - EMA_4$ . Here,  $EMA_8$  is the exponential moving average box office revenues of the last eight weeks and  $EMA_4$  corresponds to the last four weeks. A signal line is formed by smoothing the MACD line using an exponential moving average of the MACD for two weeks. The three tuning (weak) parameters that are used here to calculate the exponential moving averages have been selected by the calibration of the model.

The application of that method to our dataset would result in a significant reduction of the number of windows because there are many consecutive holidays and long periods with no holiday; it would also force us to remove most of the films that were released throughout a given year from our sample. In addition, our statistical approach allows us to check whether the constant-window-size assumption made by Corts (2001) is validated in our dataset.

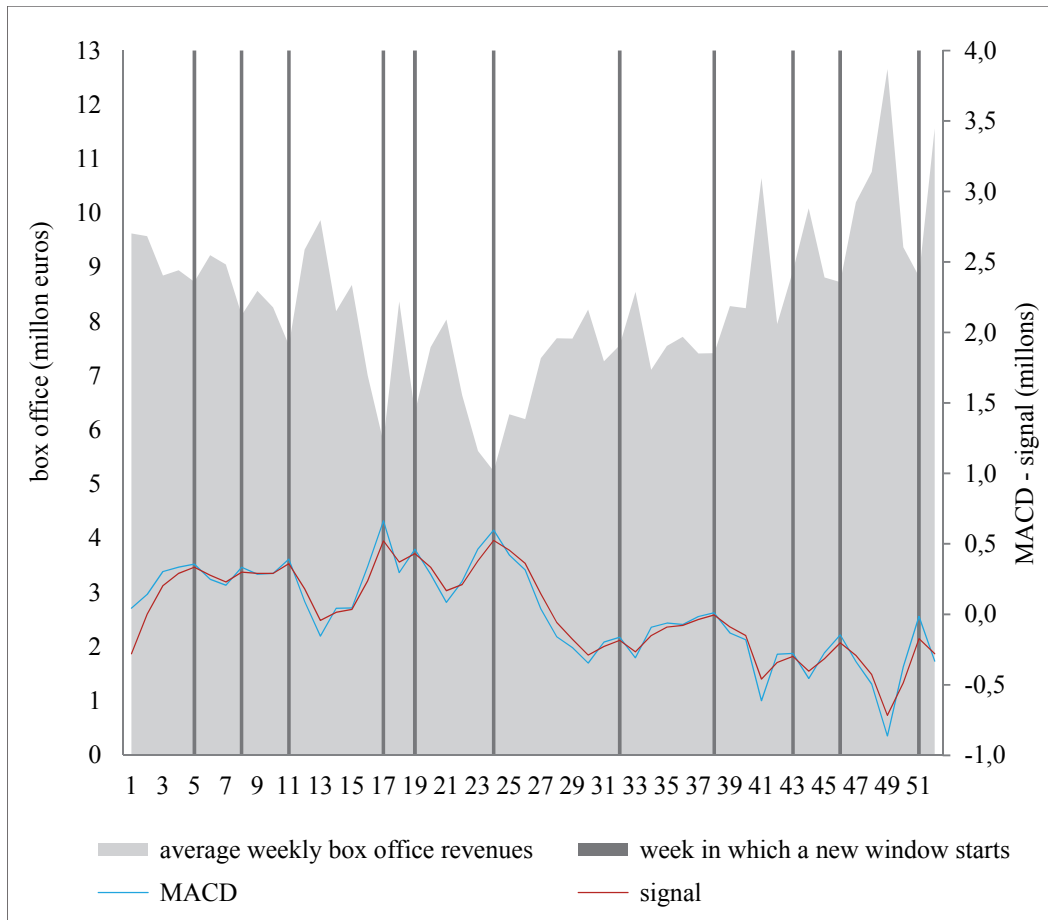
### **3. The sample, the variables and the empirical specifications of the model**

The data related to the official release dates of each movie in Spain and the rest of the considered countries<sup>12</sup> are provided by A. C. Nielsen EDI, in addition to the distributors, genres, weekly and total revenues and age ratings. Additional information about the characteristics of the films (such as their nationalities, whether they have national and international stars, and whether they have received national and international awards) were obtained from the official data of the Spanish Institute of Cinema and Audiovisual Arts (ICAA) and other sources, such as the Internet Movie Database website ([www.imdb.com](http://www.imdb.com)) and webpages of the films. Our database includes all of the films that were released during the 2002-2009 period. To build our windows, (as discussed above), we applied the MACD approach. In particular, using the average weekly box office revenues in the 2002-2009 period as the target variable, we identified 89 windows, as depicted graphically in Figure 1. The sizes of the windows (measured in weeks) are not constant; therefore, assuming a uniform window size is not justified. In addition, we observed that the major peaks for the average weekly box office revenues coincide with all the nationwide celebrations. For instance, the peaks at the beginning and end of the year match New Year's Day and Christmas. We observed a significant peak on Easter and on the National Day of Spain; the maximum peak was reached on Spanish Constitution Day.

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<sup>12</sup> In some cases, we will compare the release dates in Spain and other countries.

**Figure 1.** Average weekly box office revenues, Moving Average Convergence Divergence (MACD) and signal, for the 2002-2009 period.



By combining only those films that were released in each particular window, we arrived at 71,188 pairs of films, which is therefore the number of observations in our sample. Because the main purpose of this paper is to discover whether there is different behavior between the Major Distributors and other distributors, we split the sample into the following five groups: *SDM*, *SDNM*, *D5*, *DDMNM*, and *DDNMNM*. The *SDM* group gathers all of the observations in which both films of the pair were distributed by the same Major Distributor; the *SDNM* group includes the observations in which the two films were from the same non-major distributor; *D5* includes all of the pairs of films that were distributed by different Major Distributors; *DDMNM* gathers the pairs in which both films were distributed by different

distributors and only one of them was a Major Distributor; and the *DDNMNM* group encompasses those pairs of films that were distributed by different distributors, where neither was a Major Distributor. A summary of the descriptive statistics of the data by windows is presented in Table 1. From the total of 77,188 pairs of films, 1,406 are pairs that were released by the same non-major distributor (*SDNM*). The pairs of films released by the same Major Distributor (*SDM*) constitute 1,756 pairs. Furthermore, 7,300 pairs were released by different Major Distributors. The remaining pairs of films were released by different distributors: of these, 28,091 are pairs in which neither was distributed by a Major Distributor (*DDNMNM*), and 32,635 are pairs in which one was distributed by a Major Distributor and the other one was not (*DDMNM*).

[Insert Table 1]

After we defined all the possible combinations of films in a window, the dependent variable (*GAP*) is set as a relative measure of the temporal distance that separates the release dates of the two films. This variable was defined as the number of days between the two releases divided by the average gap value that would result if the films of the distributors that participate in each pair had been released such that they were equally temporally spaced along each window. We normalize the dependent variable in this way to account for the fact that distributors that distribute a large number of films cannot temporally separate their own films to the same extent as smaller distributors. This empirical strategy follows Borestein & Netz (1999) in their study of the airline industry, in which they normalized the average distance in the departure times of flights by the maximum possible differentiation that each airline could have achieved by separating its flights on a given day.

We compute this average gap and employ the scenario in which films are released equidistantly within a window as our benchmark<sup>13</sup>. The average distance under this assumption is as follows:

$$\bar{d}(n, m) = \left( \frac{\sum_{i=1}^{n-1} i - \frac{1}{n} \sum_{i=1}^{n-1} i^2}{\sum_{i=1}^{n-1} i} \right) m = \left( \frac{n+1}{3n} \right) m \quad (2)$$

where  $m$  is the window length (measured in numbers of days), and  $n$  is the number of films released in each window by the distributors that were involved in the release of the two films in each observation. This measure, which is denoted  $\bar{d}$ , is the average distance that would result if the films were released uniformly along the window, which would result from efforts to capture as much demand as possible and limit competition. Therefore, this measure will capture the expected benchmark for movies released by the same distributor, which will naturally try not to cannibalize itself regardless of whether it is a Major Distributor. Moreover, this normalization allows us to compare the gap across groups with different numbers of films released in each window and to control for the window-size effects because the distance between releases varies significantly and depends on the different sizes of the windows.

Additionally, we have constructed a series of control variables that are intended to capture certain movie characteristics that are relevant for a movie's commercial success<sup>14</sup>. Because two movies that share the same characteristics are more substitutive than two movies that differ greatly, two films that share many of these features may be considered close competitors. Thus, it would be expected that such variables would have a positive effect on the distance between two releases if the distributors tried to mitigate competition by separating their releases.  $SG$  is a dummy variable that identifies observations in which both of the films in a

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<sup>13</sup> We used a constant distance between films and a distance to the ends of the windows that is equal to one half of the distance between films, as proposed by Hotelling (1929).

<sup>14</sup> See De Vany & Walls (2004), McKenzie & Walls (2013), McKenzie (2009), Nelson et al. (2001), Deuchert et al. (2005), and Ravid and Basuroy (2004). Furthermore, for a brief outline of those papers that analyzed the effects of these characteristics, see Hadida (2009).

pair are of the same genre<sup>15</sup>. Similarly, *GR* and *RR* are dummies that were created to identify observations in which both films have the same age rating. In the *GR* variable, we have grouped the categories “general audiences” and “suitable for audiences age seven and older”. Similarly, in the *RR* variable we have grouped the categories “suitable for audiences age 13 and older” and “restricted audiences”. Therefore, our reference category is that the two films in a pair are aimed at two different age groups. Other dummy variables related to nationality were also created, including *FO* if both films are foreign and *SP* if both are Spanish.

The presence of stars or the fact that films may have received awards are other key factors in selecting release dates. When a movie has stars or has received an important award, it is perceived as a higher-quality film; therefore, we expect that distributors will be more interested in separating the releases of two such films to avoid the negative effects of competition. Thus, we have included a set of dummy variables whose expected coefficients are positive. The *INST\_2* variable was created for cases in which both of the films in a pair have an international star and *INST\_1* corresponds to the scenario in which only one film has such a star. Similarly, the *NAST\_2* dummy indicates when both films have a national star, and *NAST\_1* indicates when only one film has such a star. Finally, the *NAST\_INST* dummy variable identifies cases in which one film of a pair has a national star and the other film has an international star<sup>16</sup>. Similarly, to account for the awards that have been received, we created the *INAW\_2* variable for pairs of films in which both have received an international award and *NAAW\_1* for the case in which only one film in a pair has won an international award. Similarly, the *NAAW\_2* dummy indicates whether both films in a pair have received a national award and *INAW\_1* indicates if only one film in a pair has won a national award.

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<sup>15</sup> This variable was created by grouping the films in eight groups according to the following classification of genres from Nielsen: Action/Adventure, Animation, Black Comedy/Comedy/Romantic Comedy, Documentary, Drama, Fantasy/Science Fiction, Horror/Suspense, Musical/Special Events/Unknown/Western.

<sup>16</sup> In general, by international and national stars we refer to actors or directors who have won an Oscar or a Goya (a Spanish award), respectively, with certain exceptions.



Finally, the *NAAW\_INAW* variable indicates cases in which one film has won a national award and the other has won an international award<sup>17</sup>.

To perform our analysis, it is important to consider that in Spain – as in other major film markets – the "biggest" box-office hits mostly correspond to a few international blockbusters from the Major Distributors (see the European Audiovisual Observatory, 2006; De Vany and Walls, 1996; and Walls, 2005). These films, which typically have substantial budgets, take advantage of expensive release campaigns with significant investments in advertising, marketing, merchandising, tours, etc., and which are designed at the supranational level by the structural matrices of major U.S. distributors and film studios<sup>18</sup>. Such campaigns, which often represent a worldwide release, significantly determine the launching of the films and leave little leeway for affiliates to choose the release dates in their own countries. Thus, it is crucial to consider the degree (or absence) of discretion enjoyed by a Spanish distributor to choose the release dates of such movies.

One way to control for the degree of discretion is to measure the temporal distance between the releases of a particular film in Spain compared to other countries. Figure 2 shows the average distance between the release date in Spain and in four other important film markets (the USA, the UK, France and Germany) for a set of 1,418 films that were released over the 2002-2009 period. This figure shows that the larger the budget, the smaller the distance in the release dates among countries<sup>19</sup>. These data support the notion that subsidiary distributors are less able to choose the release date for films with large budgets, which are almost always associated with supranational release campaigns.

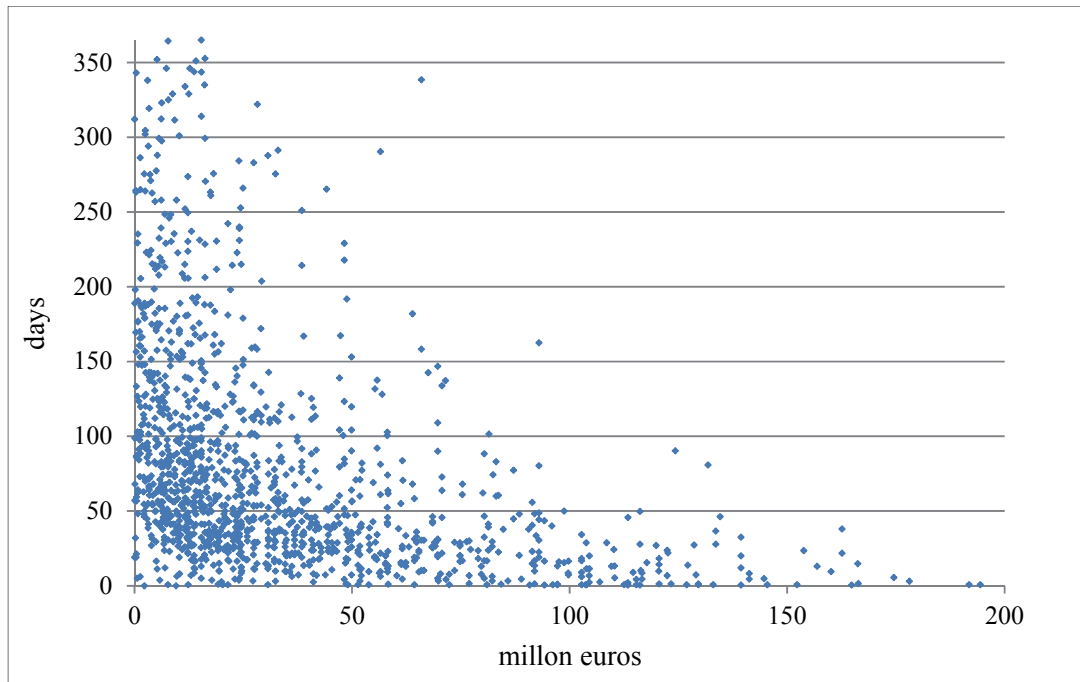
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<sup>17</sup> We have considered the Oscar and Goya awards in their main categories and the principal award in Festivals (Berlin, Cannes, San Sebastian and Venice).

<sup>18</sup> In 2005, the average cost of a movie from the Major Hollywood studios rose to 96.2 million dollars, of which 37.6% (36.2 million dollars) corresponded to promotion and marketing costs (European Audiovisual Observatory, 2006). By contrast, in 2008, the average cost of a Spanish production was 2.62 million euros, of which only 16.2% were operating costs, including copies and advertising (Ministerio de Cultura, 2009).

<sup>19</sup> It should be noted that the budget variable is not available for all the movies in our database; for this reason, it is not included as a control variable.

**Figure 2.** Average distance between the release dates in Spain and the UK, Germany, France and USA, by budget, for the 2002-2009 period.



Note: displays up to 365 days and 200 million euro budget.

This limitation indicates that release-date decisions are made at two different levels. First, international hits are managed at the supranational level by distributors that compete in the European or global market. Second, national and low-budget foreign films are managed at the national level by distributors that may or may not be linked to the Major Distributors. Only at this level can Spanish distributors unilaterally coordinate their release strategies (i.e., without heed to the decisions of parent companies or controlling partners).

In summary, foreign blockbusters' releases may be conditioned by launch campaigns designed at the supranational level that leave national distributors without any decisional power. Because these movies are expected to attract a substantial share of the demand of moviegoers worldwide, we expect that these blockbusters will be released to avoid as much competition as possible from other popular movies; furthermore, smaller films will also be released with as much distance from blockbusters as possible. To test this hypothesis, we created the

dummy variable *NO\_FLEX* for cases in which the releases of one or both films of the pair are designed at the supranational level and the Spanish distributor does not have the ability to decide the release date. This variable takes the value of one when one or both films of the pair were released with a distance less than or equal to two days in at least four of the five markets for which we have full information (the USA, the UK, France, Germany and Spain). We leave two days as a margin to account for the fact that opening days may not usually fall on a Friday in each country and for the existence of any holiday that might change the opening day in a specific country.

To maximize profits, a single distributor will tend to separate its own films from one another more than from those of its rivals; if two of a distributor's films were released in a short timeframe, the result would be lost revenue for both. However, this problem might be different if rival distributors are coordinating their decisions because they might behave as a single agent in deciding on release dates of the combined group's films; they would not be acting as independent distributors who are competing and autonomously selecting their release dates. Therefore, one way to detect collusion in this industry is to examine whether the release-date scheduling applied to films distributed by the same firm (*SDM* and *SDNM*) is similar to the observed release-date scheduling that is applied to pairs of films released by different distributors (*D5*, *DDMNM* and *DDNMNM*). Moreover, if Major Distributors are coordinating their policies, we would expect the *D5* group to have a different performance record than those of the *DDMNM* and *DDNMNM* groups.

To test for this possibility, we estimate the following specification of the reduced-form model of distributors' release schedules by employing a relative measure of the temporal distance between a pair of films  $i$  as the dependent variable:

$$\begin{aligned}
GAP_{i,w} = & \alpha + \beta_{SG}SG_i + \beta_{NAAW_1}NAAW_{-1i} + \beta_{NAAW_2}NAAW_{-2i} + \\
& \beta_{INAW_1}INAW_{-1i} + \beta_{INAW_2}INAW_{-2i} + \beta_{NAAW\_INAW}NAAW\_INAW_i + \\
& \beta_{NAST_1}NAST_{-1i} + \beta_{NAST_2}NAST_{-2i} + \beta_{INST_1}INST_{-1i} + \\
& \beta_{INST_2}INST_{-2i} + \beta_{NAST\_INST}NAST\_INST_i + \beta_{SP}SP_i + \beta_{FO}FO_i + \\
& \beta_{GR}GR_i + \beta_{RR}RR_i + \beta_{FNO\_FLEX}FNO\_FLEX_i + \alpha_w + \epsilon_{i,w}
\end{aligned} \tag{3}$$

The model includes dummy variables that control for similarities in the characteristics of films, the presence of stars and the awards received. The summary statistics of all of the variables are presented in Table 1.

Equation (3) will be estimated separately for each of the distributor groups defined above: *SDM*, *SDNM*, *D5*, *DDMNM*, and *DDNMNM*. For each equation, the constant term  $\alpha$  will capture the average relative distance between two films that are distributed by the group of distributors that are included in that particular estimation after controlling for the films' characteristics and unobserved demand window heterogeneity. Therefore, comparing  $\alpha$  across equations will allow us to capture differences in distributor groups' performances. For instance, by comparing the two intercepts of the *SDM* and *D5* samples, we will be able to examine whether the Major Distributors jointly behave as if they were a single distributor in selecting the release dates of their films by separating their releases to avoid competition among them.

#### 4. Results

We conducted several tests to select the best empirical strategy for our estimations. The values of these tests are shown in Table 2. The F tests examine whether the window-specific effects are statistically significant. For pairs of films that are distributed by the same company, which are modeled by *SDM* and *SDNM*, we cannot reject the null hypothesis that they are not statistically significant, and therefore, we estimate these two models using OLS. The window-specific effects are statistically significant in the other three models, i.e., those models that were estimated for the *D5*, *DDMNM*, and *DDNMNM* groups; thus, the FE or RE

estimators fit our data better than an OLS estimator would. Because the performed Hausman tests suggest that the window-specific effects and regressors are correlated, we display the parameter estimates for the last three models using only the FE estimator. We have used White's method to obtain robustness tests in the presence of heteroskedasticity, where clustering by windows permits correlation of the errors within them but forces errors to be independent across distinct windows.

[Insert Table 2 here]

The parameter estimates are shown in Table 2. First, we discuss the coefficients associated with movie features. We can observe in Table 2 that both the magnitude and statistical significance of the estimated parameters vary across the different groups of firms. With respect to movies distributed by Major Distributors (*SDM*), these companies try to mitigate the competition between their movies by separating pairs of films in which both have received an award, which may be national or international. However, it appears that they tend to release their movies closer to the release dates of films that have a national star (*NAST\_1*). The strategy of smaller distributors (*SDNM*)<sup>20</sup> is to release their pairs of movies with a larger gap if a movie has a national star, and this strategy is the only statistically significant effect for these distributors. With respect to pairs of movies that are not distributed by the same company, when films are linked to two different Major Distributors (*D5*), they tend to be released further apart if at least one film has an international star or when both movies have a national star. It is possible that Major Distributors release high-quality films or international blockbusters that are candidates for an international award in the same season of the year, e.g., just before the end of the year to be a potential candidate for the Academy Awards or the Golden Globes or during the Academy Award campaign to ensure high demand. Accordingly, we observe that Majors have less distance between pairs of

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<sup>20</sup> In this model, we have removed the variable pertaining to national awards, or *NAAW\_2*, because there was only one observation that met this characteristic.

films that have received international awards. For the *DDMNM* group, which corresponds to pairs of films distributed by different distributors where only one film is released by a Major Distributor, the pairs of movies that have an international star have consistently been released with a significantly longer gap. Additionally, films that have received an international award tend to be more distanced from the rest of the movies. Finally, in the *DDNMNM* group, which includes all of the pairs of films distributed by different distributors that are not Major Distributors, we observe that the average distance between the release of two films is greater when at least one of the films has an international award or a national star.

In summary, we have observed that one of the criteria in choosing release dates is avoiding films that share similar characteristics. However, these effects are related to the presence of stars or awards, and no effect was found regarding a movie's genre or rating. Moreover, although these effects are not homogeneous across groups, they are relevant for all of them; thus, the combination of distributors behind a particular pair of movies, awards and the presence of stars will be relevant variables that should be taken into account in choosing when to release these movies.

As discussed above, to account for the fact that foreign blockbusters' release dates might be conditioned on marketing campaigns designed at the supranational level, we have included the dummy variable *NO\_FLEX*. We created this variable for cases in which the Spanish distributors do not have any leeway to select the release date of one or both films in a pair of a particular observation. In this sense, it is important to highlight the fact that we have not found many cases in which two global films distributed by either the same Major Distributor or different Major Distributors are released in the same window. Therefore, Major Distributors appear to distribute films whose releases are designed at the supranational level in different windows, which ensures that these films do not compete among themselves. Moreover, by focusing on pairs distributed by the same Major Distributor (*SDM*), when one of a pair of such films is allocated into a particular window, the rest of the films distributed by its company will be released with a larger relative gap to try to avoid close rivalry. This pattern is a clear maximizing

strategy that has no moral implications when it is followed by an individual firm, as captured in the *SDM* estimation. However, we observe exactly the same pattern when we compare global releases distributed by a single Major and those releases that were distributed by different Major Distributors (*D5*). This outcome seems to indicate the presence of coordination between Major Distributors. In fact, this result is consistent with our previous result that Major Distributors do not release potential global blockbusters in the same demand window.

Finally, the intercept  $\alpha$  can be interpreted as the average relative gap between films that has nothing to do with any of the characteristics controlled for the rest of the variables included in the regression (including window unobserved heterogeneity). Because  $\alpha$  is a conditional average, unobserved differences in the release performances of distributors' films should be captured by this coefficient. If  $\alpha$  is one, then films are distributed uniformly along the window to try to capture as much of the demand as possible by avoiding direct competition, as is proposed in spatial or temporal demand models such as that of Hotelling (1929). Therefore, we expect an intercept close to one when we consider only pairs of films released by the same distributor. The estimated intercepts for *SDM* and *SDNM* are 0.8763 and 0.8628, respectively; these intercepts are not equal to one but are closer to one than the intercepts that were estimated for pairs of movies released by different distributors, except when each is a Major Distributor (*D5*).

The main purpose of this paper is to evaluate whether there are differences in the release policies of different types of motion picture distributors and whether there are signs of *between*-firm coordination policies. In that case, we could provide insight into collusive behavior, which is particularly common among companies with significant market power, i.e., Major Distributors. To test this hypothesis, we have conducted Z-tests to identify significant differences in the intercepts across models. The results are presented in Table 3.

[Insert Table 3 here]

We are interested in testing whether the Majors are behaving as cartel members when they set the release schedules of their films. For this reason, we compare the intercept of the *D5* group with the intercepts of the other groups. Given our parameter estimates, we can reject the null hypothesis of similar *between-firm* behavior because the estimated intercept for the three equations with pairs of films distributed by two different firms (the *D5*, *DDMNM* and *DDNMNM* groups) are significantly different. Thus, the average relative distances between the release dates of movies distributed by two Major Distributors are significantly larger than the average temporal distance between movies distributed by different distributors when at least one of them is a non-major distributor. Thus, two Major Distributors are able to distance their releases more than any other combination of two distributors, which supports the idea that Major Distributors are acting in coordination with one another when setting their release schedules. In fact, they behave as if they were a single distributor in setting the release dates of their own films because we cannot reject the null hypothesis that the estimated intercepts for the *SDM*, *SDNM* and *D5* groups are all equal. It appears that Major Distributors jointly set their release schedules in a similar manner as any single distributor selects the release dates of its own films. This result reinforces the previous finding regarding worldwide releases (the *NO\_FLEX* variable). It appears that the degree of *within-firm* coordination exhibited by each Major company, which is intended to maximize profits when they fix their own movie release dates, is also achieved *between* Major Distributors. Although it is legitimate for a single distributor to separate its own releases to avoid cannibalizing its own films, this behavior is censurable when it is the result of a coordinated strategy in a group of firms.

## 5. Conclusion

The main purpose of this paper is to shed light on the presence of collusive behavior among the Major Distributors in the Spanish motion picture market. To achieve this, we estimated reduced-form models in which our dependent variable is the gap between the release dates of two films because the release date is a critical variable of competition in this industry in which films do not compete on



prices. Following Corts (2001), the empirical specification of our model relies on previously defined temporal market segments or theater-demand windows; however, unlike Corts (2001), we identified such windows using statistical techniques. Next, we analyzed the factors that may affect the gap between two films released within a particular window. In our application, this gap is a relative measure because we have used the optimal distribution according to spatial demand models such as that of Hotelling (1929) as a benchmark. We found that distributors try to elude competition between films that share certain characteristics – such as the presence of stars or awards – regardless of the combination of distributors that are releasing a particular pair of movies. It is notable that no effect was found regarding the genre or the rating.

Next, we attempted to identify significant differences in the observed behavior between Major Distributors and other distributors because the former would be interested in coordinating their release schedules to maximize their profits. We tested whether Major Distributors have a joint strategy to release their films to avoid overlaps and to separate their release dates. If Major Distributors coordinate their decisions, then we can expect them to behave as a single distributor rather than as an independent firm in determining release schedules. The empirical evidence shows that movies distributed by different Major Distributors have more temporal distance than movies distributed by different smaller distributors, which reinforces the idea that Major Distributors act as a cartel. Moreover, as a group, Major Distributors generally appear to separate their movies to a similar extent as they would have independently distanced their own films and as other distributors that are not Major Distributors would separate their own movies.

Furthermore, we accounted for the effect of films under global release strategies, which we identified as movies that were released within the same week in the U.S. and four European countries. These global blockbusters are mainly distributed by Major Distributors and are normally released in different windows to ensure that they do not compete with one another. Furthermore, once a distributor allocates one of these global films into a particular window, the rest of its films are

released with a larger relative gap. However, we observe exactly the same pattern when we compare a supranational fixed release distributed by a Major Distributor to other films distributed by a different Major Distributor, which suggests the presence of coordination between Major Distributors.

Therefore, we have found evidence that Major Distributors behave as a single firm to maximize profits and limit competition. Although it is appropriate for a distributor to separate its own releases to avoid cannibalizing its own projects, this behavior is censurable when it results from synchronization between competing distributors.

Obviously, we have no explicit evidence of collusion and we have not witnessed meetings between the CEOs of Major Distributors. However, given the estimated coefficients, it is difficult to explain our results without assuming that Major Distributors maintain some coordination mechanisms that enable them to behave as if they were a single distributor. It might be argued that the information about other firms' releases is known in advance by all actors in the industry and that the observed behavior is the result of appropriate decisions that utilize available information. However, it is difficult to believe that only Major Distributors are able to take advantage of this information and that they really behave without coordination, particularly when we observed such apparent coordination with respect to their worldwide releases.

## References

- Borenstein, S.; Netz, J., 1999. Why do all the flights leave at 8 am?: Competition and departure time differentiation in airline markets, *International Journal of Industrial Organization*, 17(5), 611-40.
- Cameron, A.; Trivedi, P., 2009. *Microeconometrics Using Stata*. Texas: Stata Press.
- Corts, K., 2001. The Strategic Effects of Vertical Market Structure: Common Agency and Divisionalization in the US Motion Picture Industry, *Journal of Economics and Management Strategy*, 10(4), 509-528.
- Davis, P.; Garcés, E., 2010. *Damage estimation, Quantitative techniques for competition and antitrust analysis*, Chapter 7, Princeton University Press.
- De Vany, A.; Walls, D., 1997. The Market for Motion Pictures: Rank, Revenues and Survival, *Economic Inquiry*, XXXV (4), 783-797.
- De Vany, A.; Walls, D., 1999. Quality Evaluations and the Breakdown of Statistical Herding in the Dynamics of Box Office Revenue, in De Vany, A. 2004. *Hollywood Economics: How Extreme Uncertainty Shapes the Film Industry* (pp. 48-63), Contemporary Political Economy Series: Taylor & Francis Routledge.
- De Vany, A.; Walls, D., 2004. Motion picture profit, the stable Paretian hypothesis, and the curse of the superstar, *Journal of Economic Dynamics and Control*, 28(6), 1035-1057.
- De Vany, A.; Walls, D., 1996. Bose-Einstein Dynamics and Adaptive Contracting in the Motion Picture Industry, *Economic Journal*, 106(439), 1493-1514.
- Deuchert, E., Adjamah, K.; Pauly F., 2005. For Oscar Glory Or Oscar Money?, *Journal of Cultural Economics*, 29 (3), 159-176.
- Einav, L., 2007. Seasonality in the U.S. motion picture industry, *The RAND Journal of Economics*, 38(1), 127-145.
- Einav, L., 2010. Not All Rivals Look Alike: Estimating an Equilibrium Model of The Release Date Timing Game, *Economic Inquiry*, 48(2), 369-390.
- European Audiovisual Observatory, Focus., 2006. *World Film Market Trends*, [www.obs.coe.int](http://www.obs.coe.int).
- Fernández-Blanco, P., Bodas-Sagi, D., Soltero, F.; Hidalgo, J., 2008. Technical Market Indicators Optimization using Evolutionary Algorithms. Proceedings of the 2008 GECCO conference companion on Genetic and evolutionary computation GECCO 08, 1851-1857.
- Gil, R., 2009. Revenue Sharing Distortions and Vertical Integration in the Movie Industry, *Journal of Law, Economics, and Organization*, 29(2), 579-609.
- Gil, R., 2013. The Interplay of Formal and Relational Contracts: Evidence from Movies, *Journal of Law, Economics, and Organization*, 29(3), 681-710.

- Gutiérrez-Navratil, F., Fernández-Blanco, V., Orea, L.; Prieto-Rodríguez, J., 2013. How Do Your Rivals' Releasing Dates Affect Your Box Office?, *Journal of Cultural Economics*, doi 10.1007/s10824-012-9188-0, forthcoming.
- Hadida, A., 2009. Motion Picture Performance: A Review and Research Agenda. *International Journal of Management Reviews*, 11(3), 297-335
- Harrington, J., 2005. Detecting Cartels, Economics Working Paper Archive 526, The Johns Hopkins University, Department of Economics.
- Hotelling, H., 1929. Stability in Competition, *Economic Journal*, 39 (153), 41–57.
- Krider R.; Weinberg. C., 1998. Competitive Dynamics and the Introduction of New Products: The Motion Pictures Timing Game, *Journal of Marketing Research*, 35 (1), 1-15.
- McKenzie, J., 2009. Revealed word-of-mouth demand and adaptive supply: survival of motion pictures at the Australian box office, *Journal of Cultural Economics*, 33 (4), 279-99.
- McKenzie, J; Walls, D., 2013. Australian films at the Australian box office: performance, distribution, and subsidies, *Journal of Cultural Economics*, 37 (2), 247-269.
- Ministerio de Cultura. 2009. Boletín Informativo 2009, Instituto de la Cinematografía y las Artes Audiovisuales, Madrid.
- Moul, C.; Shugan, S., 2005. Theatrical release and the launching of motion pictures. In C. C. Moul (Ed.), *A Concise Handbook of Movie Industry Economics* (pp. 80-137). Cambridge, UK: Cambridge University Press.
- Nelson, R., Donihue, M., Waldman, D.; Wheaton, C., 2001. What's an Oscar worth?, *Economic Inquiry*, 39(1), 1–16.
- Netz, J.; Taylor, B., 2002. Maximum or minimum differentiation? Location patterns of retail outlets, *Review of Economics and Statistics*, 84(1), 162-175.
- Ohashi, H., 2005. How does Ownership Structure Affect the Timing of New Product Introductions? Evidence from the U.S. Video Game Market. CIRJE-F-325, Tokyo.
- Porter, P.; Zona, D., 1993. Detection of Bid-rigging in Procurement Auctions, *Journal of Political Economy*, 101(3), 518-538.
- Porter, P.; Zona, D., 1999. Ohio School Milk Markets: An Analysis of Bidding, *Rand Journal of Economics*, 30(2), 263-288.
- Radas, S.; Shugan, S., 1998. Seasonal Marketing and Timing New Product Introductions, *Journal of Marketing Research*, 35(3), 296-315.
- Ravid, S.; Basuroy, S., 2004. Managerial objectives, the R-rating puzzle, and the production of violent films, *Journal of Business*, 77(Supplement), 155-192.

- Salvanes, K., Steen, F.; Sorgard, L., 2005. Hotelling in the air? Flight departures in Norway, *Regional Science and Urban Economics*, 35(2), 193-213.
- Tribunal de Defensa de la Competencia., 2006. Resolución Expediente 588/05, Distribuidores Cine, <http://www.cncompetencia.es/Inicio/Expedientes/tabid/116/Default.aspx?numero=588/05&ambito=Conductas>
- Vogel, H., 2007. Entertainment Industry Economics. A guide for financial analysis (7th ed.). Cambridge, UK: Cambridge University Press.
- Walls, D., 2005. Modeling Movie Success When 'Nobody Knows Anything': Conditional Stable-Distribution Analysis Of Film Returns. *Journal of Cultural Economics*, 29(3), 177-190.
- Weinberg, C., 2005. Profits out of the Picture: Research Issues and Revenue Sources Beyond the North American Box Office in MOUL, Ch. A Concise Handbook of Movie Industry Economics, Cambridge University Press, New York, 2005.
- Wooldridge, J. M., 2002. Econometric Analysis of Cross Section and Panel Data. Cambridge, Massachusetts: MIT Press.

**Table 1.** Summary statistics of average data by windows

By windows:					
	mean	std. dev.	min.	max.	total
<i>GAP</i>	0.763	0.115	0.394	0.998	-
Weeks	4.7	1.7	2	8	419
Films	37.69	14.74	12	75	3,266
Pairs	799.9	581.6	66	2,775	71,188
Pairs of:					
<i>SDM</i>	19.7	15.4	1	75	1,756
<i>SDNM</i>	15.8	16.0	0	83	1,406
<i>D5</i>	82.0	56.9	5	276	7,300
<i>DDMNM</i>	366.7	255.0	35	1,166	32,635
<i>DDNMNM</i>	315.6	272.7	17	1,373	28,091
<i>SG</i>	196.0	146.3	13	742	17,443
<i>NAAW_1</i>	40.8	44.6	0	172	3,630
<i>NAAW_2</i>	0.7	1.5	0	6	65
<i>INAW_1</i>	165.9	130.1	0	610	14,767
<i>INAW_2</i>	11.9	13.3	0	66	1,055
<i>NAAW_INAV</i>	5.9	7.7	0	37	521
<i>NAST_1</i>	52.4	48.7	0	222	4,664
<i>NAST_2</i>	2.0	3.3	0	15	178
<i>INST_1</i>	293.0	198.3	28	846	26,081
<i>INST_2</i>	61.0	46.0	3	210	5,425
<i>NAST_INST</i>	21.2	19.0	0	75	1,886
<i>SP</i>	42.6	38.2	0	231	3,788
<i>FO</i>	473.3	380.4	28	1,770	42,125
<i>GR</i>	104.9	98.8	3	465	9,338
<i>RR</i>	333.0	263.3	21	1,225	29,640
<i>NO_FLEX</i>	8.8	15.5	0	63	781

**Table 2. Estimated models**

<i>GAP</i>										
Variable	<i>SDM</i>		<i>SDNM</i>		<i>D5</i>		<i>DDMNM</i>		<i>DDNMNM</i>	
	Coefficient	<i>robust-t</i>	Coefficient	<i>robust-t</i>	Coefficient	<i>robust-t</i>	Coefficient	<i>robust-t</i>	Coefficient	<i>robust-t</i>
<i>SG</i>	-0.0176	-0.52	-0.0234	-0.71	0.0020	0.09	-0.0088	-0.98	-0.0141	-1.43
<i>NAAW_1</i>	0.0723	0.98	0.0264	0.36	-0.0268	-0.57	-0.0005	-0.02	-0.0102	-0.36
<i>NAAW_2</i>	0.3528 **	2.46	-	-	-0.1558	-1.20	-0.0138	-0.16	-0.0243	-0.20
<i>INAW_1</i>	0.0181	0.50	0.0565	1.64	-0.0031	-0.09	0.0277 *	1.88	0.0381 **	2.61
<i>INAW_2</i>	0.3130 **	2.27	0.0399	0.51	-0.1310 **	-2.22	0.0542	1.54	0.0892 ***	3.25
<i>NAAW_INAW</i>	0.2310	1.18	0.0225	0.19	0.0263	0.24	-0.0216	-0.54	0.0177	0.39
<i>NAST_1</i>	-0.1459 **	-2.05	0.1138 **	2.53	0.0469	1.08	0.0376	1.57	0.0599 **	2.21
<i>NAST_2</i>	-0.1839	-1.04	-0.0058	-0.04	0.1912 *	1.93	0.0246	0.41	0.1738 ***	2.68
<i>INST_1</i>	-0.0442	-1.43	-0.0020	-0.06	0.0438 **	2.01	0.0172	1.31	0.0249	1.55
<i>INST_2</i>	0.0245	0.63	0.0773	1.27	0.0705 **	2.02	0.0367 *	1.79	0.0368	1.49
<i>NAST_INST</i>	-0.0277	-0.51	0.0826	0.59	0.0158	0.35	0.0224	0.89	0.0044	0.14
<i>SP</i>	0.0679	0.61	-0.0060	-0.12	0.0731	1.59	0.0241	1.13	-0.0232	-1.57
<i>FO</i>	0.0388	0.85	0.0462	1.46	0.0109	0.41	0.0027	0.26	0.0110	1.01
<i>GR</i>	0.0363	1.11	-0.0379	-0.73	-0.0234	-0.94	-0.0021	-0.15	-0.0230	-1.51
<i>RR</i>	0.0332	1.29	-0.0331	-1.19	-0.0080	-0.36	-0.0074	-0.66	-0.0136	-1.19
<i>NO_FLEX</i>	0.0952 *	1.92	0.0991	1.58	0.0957 *	1.90	0.0105	0.25	0.2964	1.31
<i>CONS</i>	0.8763 ***	16.79	0.8628 ***	21.63	0.8650 ***	34.74	0.8048 ***	77.04	0.7642 ***	70.82
<i>N</i>	1756		1406		7300		32635		28091	
<i>F</i>	F(16,88) = 4.22		F(15,86) = 3.07		F(16,88) = 2.42		F(16,88) = 0.89		F(16,88) = 2.43	
<i>F test H0: a<sub>w</sub>=a, p/w=1,...63</i>	F(88,1651) = 0.81		F(86,1304) = 0.90		F(88,7195) = 2.16		F(88,32530) = 7.35		F(88,27986) = 5.73	
<i>Hausman test</i>	-		-		F(16,88) = 1.88		F(16,88) = 4.90		F(16,88) = 3.85	
Model estimated by	OLS		OLS		FE		FE		FE	

Note: \*\*\* significant at 1% level; \*\* significant at 5% level; \* significant at 10% level.

**Table 3. Z- test results**

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Comparing constant term  $\alpha_0$  between:

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	<i>D5 - SDM</i>	<i>D5 - SDNM</i>	<i>D5 - DDMNM</i>	<i>D5 - DDNMNM</i>
<i>Z test</i>	-0.20	0.05	2.23	3.71
$H_0: \alpha_0 = \alpha_0$	[0.8414]	[0.9680]	[0.0258]	[0.0002]

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Note: Probability in brackets.



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