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Screening decisions of vertically integrated theaters in the Korean movie industry

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HIGHLIGHTS

- We examine the effects of vertical integration on screening decisions in the Korean movie industry.
- We find that integrated theaters show their affiliated movies more than nonaffiliated movies.
- However, this gap reduces during the peak times of the day and after the opening week.
- Our evidence suggests that the integrated theaters' screening decisions are consistent with treating the incentive misalignment.

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ABSTRACT

This paper investigates the effects of vertical integration on screening decisions using data from the Korean movie industry. We find that integrated theaters show their affiliated movies more than non-affiliated movies, and more than nonintegrated theaters do. However, this gap reduces during the peak times of the day and after the opening week. Our evidence suggests that the integrated theaters' screening decisions favorable to their own movies are better understood as the result of dealing with the incentive misalignment than as the result of foreclosing other movies.

1. Introduction

The movie industry is one area where the effects of vertical integration on economic outcomes have received considerable attention from economists and policy makers.[1] In the Korean movie industry, vertically integrated theaters with market dominance have been criticized for giving more screening opportunities to their affiliated movies than nonaffiliated movies. In December 2014, the Korea Fair Trade Commission regarded such movie screenings as aiming to foreclose nonaffiliated movies and levied fines on the integrated theaters.[2]

However, in evaluating the anticompetitiveness of the integrated theaters' screening behavior, we need to address other motives besides market foreclosure. Indeed, distributors intend to screen their movies in exhibitors' theaters as many times as possible, while exhibitors have incentives to switch to new movie releases because they share box office revenue with the distributors but profit from the entire concession sales. This incentive misalignment becomes worse when the revenue-sharing ratio

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[1] Existing studies consider various outcome measures such as release-date scheduling (Corts, 2001), movie run length (Fu, 2009; Gil, 2009), ex post run-length adjustment (Hanssen, 2010), and ticket prices (Sunada, 2010; Gil, 2015).

[2] A well-known antitrust case in the movie industry is the Paramount decrees that forced major studios to divest their exhibition branches in the US in 1948.

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Table 1
Summary statistics.

	Theaters		Movies	
	Integrated	Nonintegrated	Affiliated	Nonaffiliated
Observations	46	25	89	110
No. of screens	8.0	5.9	–	–
No. of seats	1340.9	1034.9	–	–
No. of showings per week	242.9	207.7	–	–
% of showings of own movies	26.1	–	–	–
% of showings during peak times[a]	–	–	45.0	45.7
% of showings during opening week	–	–	33.6	31.3
% of audiences during opening week	–	–	44.0	43.6

[a] The peak times are from 3 pm to 11 pm.

between distributors and exhibitors is fixed, as in Korea.[3] Then, vertical integration attenuates the incentive alignment problems (Gil, 2009). That is, integrated theaters are incentivized to screen their affiliated movies more because they receive the full box office revenue from the movies.

This study aims to investigate how vertical integration affects screening decisions in the Korean movie industry. Specifically, we contribute to the literature by examining the decisions of theaters on the number of times a movie is shown during peak times of the day and after the first week of release. Compared to movie run length considered in Fu (2009) and Gil (2009), the number of movie showings is a more appropriate outcome measure to address the issue of market foreclosure in that theaters can play a movie only for a limited number of times during its run.

Applying a fixed-effects model to the daily movie screening schedules data at the theater level, we find evidence that integrated theaters play their affiliated movies more than nonaffiliated movies, and more than nonintegrated theaters play the movies of integrated distributors. However, they reduce this gap during peak times of the day and after the opening week. We interpret our findings to suggest that the integrated theaters' screening decisions favorable to their own movies are better understood as the result of dealing with the incentive misalignment than as the result of foreclosing other movies.

The rest of this paper proceeds as follows. Section 2 explains our data and estimation strategy. Section 3 presents the empirical results and discusses them. Section 4 concludes the paper.

2. Data and estimation model

In the Korean movie industry, two major distributors CJ E&M and Lotte Entertainment own multiplex chains CGV and Lotte Cinema, respectively.[4] During the period 2012–2014, the audience market share of the two distributors' movies was around 37.6%. In the exhibition market, the two multiplex chains accounted for 63.2% of all theaters and 71.1% of all screens.

We collected the theater-level daily movie screening data from January 2012 to March 2014 from the Korean Film Council (KOFIC).[5] By restricting our attention to theaters located in Seoul and to movies that drew audiences of over 300,000 people in total, our dataset covers 71 theaters and 199 movies. This 71-theater sample represents 22% of the total number of theaters in Korea. For each movie, we compiled the distributor, release date, and daily audience data.

Meanwhile, from the KOFIC's survey in 2013, 22.9% of the respondents said they generally watched movies between 3 pm and 7 pm, and 32.5% said they watched movies between 7 pm and 11 pm.[6] Based on the survey results, we consider the following three peak times for movie watching: 3 pm to 11 pm, 4 pm to 10 pm, and 5 pm to 9 pm.

The summary statistics for the sample of 71 theaters and 199 movies are presented in Table 1. 46 of the 71 theaters were vertically integrated, and 89 of the 199 movies were supplied by integrated distributors. The average integrated (nonintegrated) theater has 8 (5.9) screens and 1340 (1034) seats, and screened movies 243 (208) times per week. Furthermore, 26% of the movies shown in an integrated theater were supplied by its own distributor. On average, showings of an affiliated (a nonaffiliated) movie during the peak times and opening week respectively accounted for 45% (45.7%) and 33.6% (31.3%) of the total number of showings. Also, 44.0% of the total audience watched a movie in the first week of its release.

We consider the following estimation equation:

$$\begin{aligned} screening_{ijst} = {} & \beta_0 + \beta_1 own_{ij} + \beta_2 peak_s + \beta_3 opening_{it} \\ & + \beta_4 audience_{it-1} + \beta_5 (own_{ij} \times peak_s) \\ & + \beta_6 (own_{ij} \times opening_{it}) \\ & + \beta_7 (own_{ij} \times audience_{it-1}) \\ & + \beta_8 (peak_s \times opening_{it}) \\ & + \beta_9 (peak_s \times audience_{it-1}) \\ & + \beta_{10} (opening_{it} \times audience_{it-1}) \\ & + \delta_i + \eta_j + \theta_t + \epsilon_{ijst}, \end{aligned} \tag{1}$$

where $screening_{ijst}$ is the number of times theater j screens movie i at time s of the day during week t.[7] Here, a movie run is limited to the first four weeks, since over 98% of the audience watched the sample movies during this period. own_{ij} takes the value of 1 if movie i's distributor owns theater j and 0 otherwise; $peak_s$ takes the value of 1 if time s is peak time and 0 otherwise; $opening_{it}$ takes the value of 1 if movie i is released in week t and 0 otherwise. $audience_{it-1}$ is movie i's total audience in week $t-1$ and controls for movie performance. δ_i, η_j, and θ_t are movie, theater, and week fixed effects, respectively.

3. Empirical results

Table 2 presents the results of estimating Eq. (1) with the three different peak times. In columns 1 and 2, 3 and 4, and 5 and 6 of

[3] In countries such as Spain and the US, the distributors' share of box office revenue declines over time, and this induces exhibitors to screen movies an extra week.

[4] In June 2014, Megabox, the third largest multiplex chain in Korea, founded its distribution agency.

[5] During this period, the integrated theaters are alleged to have foreclosed nonaffiliated movies.

[6] 14.5% watched movies before 11 am, 9.9% watched them between 11 am and 3 pm, and 5.1% watched them after 11 pm. 15.1% said they were indifferent to movie viewing times (KOFIC, 2014).

[7] In Korea, theaters generally decide which movie to show and how many times the movie will be shown on a weekly basis.