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Vertical Integration during the Hollywood Studio Era

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The Hollywood studio system—production, distribution, and exhibition vertically integrated—flourished until 1948, when the famous *Paramount* decision forced the divestiture of theater chains and the abandonment of a number of vertical practices. Although many of the banned practices have since been posited to have increased efficiency, evidence of an efficiency-enhancing rationale for theater ownership has not been presented. This paper explores the hypothesis that theater chain ownership promoted efficient ex post adjustment in the length of film runs—specifically, abbreviation of unexpectedly unpopular films. Extracontractual run-length adjustments are desirable because demand for a film is not revealed until the film is actually exhibited. The paper employs a unique data set of cinema booking sheets. It finds that run lengths for releases by vertically integrated film producers were significantly—economically and statistically—more likely to be altered ex post. The paper documents and discusses additional practices intended to promote flexibility.

1. Introduction

Arguably, no U.S. antitrust action of the postwar period has had a more profound effect on an industry than the *Paramount* case, which brought the famous Hollywood studio era to an end (*U.S. v. Paramount Pictures, Inc.*, 66 F. Supp. 323 [S.D.N.Y. 1946]; modified on recharging, 70 F. Supp 53 [S.D.N.Y. 1947]; *U.S. v. Paramount Pictures, Inc.*, 334 U.S. 131 [1948]; remanded, 85 F. Supp. 881

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[S.D.N.Y. 1949]). The *Paramount* consent decrees, following more than 25 years of near-continuous litigation, fundamentally altered the structure of the relationship between producers/distributors and exhibitors. Under the terms of the decrees, contractual practices such as block booking were banned; the system of runs, clearance periods, and zoning under which films were distributed was outlawed; and the divestiture of producer-owned cinemas was mandated. The scope of the decision was remarkable—in recent years, only the AT&T breakup comes close.

The passage of time has not been kind to the economic arguments underlying the *Paramount* decision.[1] Kenney and Klein (1983) and Hanssen (2000) provide efficiency rationales for block booking. De Vany and Eckert (1991) and Orbach and Einav (2007) discuss how minimum ticket prices reduced monitoring costs. De Vany and Eckert (1991) argue that the system of runs, clearances, and zoning served to provide low-cost access to large numbers of filmgoers.[2]

The one banned practice that has yet to be explained satisfactorily is Hollywood's vertical integration of exhibition with production/distribution.[3] Although the Justice Department's assertion that integration was intended to foreclose competition appears naive today, no better alternative has arisen. Indeed, it is not immediately apparent what (if anything) film companies gained by owning both production and exhibition facilities. Cinema ownership was certainly not a prerequisite for success in production—there were a large number of cinemaless film producers (albeit somewhat smaller in size), including three of the *Paramount* defendants. Similarly, many independent cinemas flourished and in fact accounted for the majority of attendance revenues. Furthermore, because most affiliated cinemas were more likely to show films by rival filmmakers than by the affiliated studio, avoiding double marginalization does not appear to have been the issue. And although direct ownership of certain large urban cinemas—the movie palaces—might conceivably be understood as a response to concerns about risk sharing (they showed some of the highest variance films), information gathering (they helped producers understand demand conditions), or free riding

[1] The Court asserted that first-run exhibition was foreclosed in order to maintain a monopoly on movie production and that the monopoly on movie production enabled the defendants to foreclose first-run exhibition (the circularity of the argument was not commented on). "Naive foreclosure" theory of this type was effectively demolished by Chicago School scholars of the late 1950s onward. Although more recent models provide a stronger theoretical foundation for claims of foreclosure through vertical integration (Salinger 1988; Ordover, Saloner, and Salop 1990; Riordan 1998), many nonaffiliated producers and exhibitors were clearly not foreclosed during the Hollywood studio era—see the discussion that follows. De Vany and McMillan (2004) find that share prices of both integrated and nonintegrated producers fell by 4–12 percent when the Supreme Court handed down its 1948 *Paramount* decision; the authors conclude that this supports the hypothesis that the disputed vertical practices did not hurt independent competitors.

[2] De Vany and Eckert (1991) also argue that various other practices described by the *Paramount* Court as (p. 80) "devices for stifling competition and diverting the cream of the business to the large operators" (for example, formula deals, whereby film rents were set as a percentage of national gross, and master agreements, which licensed whole circuits simultaneously) actually served to reduce transaction costs.

[3] But see Raskovich (2003) for a model with application to *Paramount*.

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(their screenings influenced attendance in subsequent runs), large urban cinemas composed only a minority of the exhibition outlets owned by the *Paramount* defendants.

In this paper, I explore the hypothesis that cinema ownership promoted revenue-enhancing but difficult to contract for ex post adjustments in the length of film runs.[4] Because the precise nature—or even existence—of any arrangement cannot be observed (being, by definition, extracontractual), I proceed by indirection.[5] Was vertical integration associated with a greater probability of ex post run-length renegotiation, ceteris paribus? Were there fewer ex post renegotiations in which information problems were less severe? Did independent cinemas—cinemas with no ownership links to film producers—engage in less ex post renegotiation?

To answer these questions, I make use of a unique data set of cinema booking sheets from the 1937–38 film season.[6] Consistent with the hypothesis, I find that abbreviated runs were nearly 3 times as likely for films released by companies that owned cinema chains. I find that previously screened films—films for which more accurate information about public demand was available—were substantially less likely to be abbreviated. I find that independently owned (as opposed to producer-owned) cinemas dealt with ex post adjustments in an entirely different fashion. Finally, I find that both film contracts and the process of film distribution changed fundamentally after the *Paramount* decrees, in ways a concern with ex post adjustment would suggest. All this is consistent with the proposition that cinema ownership was part of a system that supported efficient ex post adjustments in the length of film runs.

This paper thus contributes to a large literature on relational, implicit, or self-enforcing contracts—arrangements undergirded not by the threat of third-party enforcement (by a court, for example) but by reputation, the prospect of repeat dealings, or self-enforcing penalties (see, for example, Klein 1996; Klein and Leffler 1981; Klein and Murphy 1997; MacLeod and Malcomson 1989; Telser 1981; Williamson 1975, 1985).[7] As many researchers have noted, important aspects of business relationships (both inside and outside the firm) are conducted without formal contracts. Baker, Gibbons, and Murphy (2002, p. 40) write, "A relational contract . . . allows the parties to utilize their detailed knowledge of their specific situation and to adapt to new information as it becomes available."

[4] In other words, a film that was booked to run for 3 days might be abbreviated after 2 if it proved to be unexpectedly unpopular, or it might run 4 days if it proved to be unexpectedly popular. Ex post adjustments could generate potentially large gains because demand is highly unpredictable until a film actually begins its run (see, for example, De Vany and Walls 1996).

[5] Although I use the word "arrangement," no explicit collusion was necessary—cinema ownership could simply have aligned incentives so as to support coordination.

[6] The film-booking season typically ran from September 1 of one year to August 31 of the following year. See *United States v. Paramount et al.*, Petition, Equity No. 87-823 (1938), p. 55.

[7] Kenney and Klein (2000) review various self-enforcing aspects of movie exhibition contracts. There is also a large related literature in sociology and organizational behavior; see, for example, Simon (1951) on employment relationships.

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Referring specifically to the Hollywood studio era, film scholar Douglas Gomery (1986, p. 193) writes, "Historians' interest in competition for maximum box office revenues has only served to ignore the total and necessary corporate cooperation which existed on the levels of distribution and exhibition." And although it has been proposed that vertical integration may play a role in maintaining relational contracts (Klein and Murphy 1997; Baker, Gibbons, and Murphy 2002), relatively little systematic empirical evidence—of the kind presented here—has been brought to bear on the question.

The paper also contributes to a burgeoning literature on vertical arrangements in the motion picture industry. In analyses of the Spanish film industry, Gil (2007) finds that vertical integration is associated with more frequent renegotiation of contractual terms (which sometimes led to extended runs), Gil (2009) argues that vertical integration resolves run-length distortions induced by revenue-sharing contracts, and Gil and Lafontaine (2009) propose that revenue sharing deters opportunistic (that is to say, inefficient) ex post renegotiation while giving exhibitors the incentive to keep films of ex ante uncertain quality on the screen longer. Filson (2005) develops a model predicting that vertical integration leads to better coordination of film runs, while Filson, Switzer, and Besocke (2005) examine ex post adjustments in sharing percentages, which grant a larger proportion of residual claims to exhibitors when films do more poorly than expected and to distributors when films do better than expected. Corts (2001) provides evidence that producers and distributors with linked ownership are better able to coordinate film opening dates. In studies of the Hollywood studio era, Hanssen (2002) explains the emergence of revenue-sharing contracts in movie exhibition as a response to measurement problems and the need to provide appropriate incentives, while Hanssen (2000) and Kenney and Klein (1983, 2000) document a number of features of exhibition contracting intended to promote postcontractual flexibility. De Vany and Eckert (1991) examine and discuss the basic problem created by ex ante uncertainty in the motion picture industry and the contractual mechanisms that have evolved to deal with it.[8]

The findings presented in this paper have implications not only for understanding the *Paramount* case (as important as that may be, given that the *Paramount* consent decrees are still in effect) but for theories of foreclosure more generally. The parallels between Hollywood's motion picture companies and today's cable television companies are clear, with vertically integrated firms both providing content (movies and cable programs and networks) and owning exhibition facilities. A number of commentators have suggested that if allowed to produce programming, cable television companies will favor their own productions over those of independent rivals (see Waterman and Weiss 1996; Chipty 2001).[9] In this paper, I provide evidence that cinema-owning motion picture

[8] See Mortimer (2008) for a related discussion of the video rental business.

[9] Similar arguments were applied to network television in past decades; see the discussion in Crandall (1975).

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companies did not favor their own productions—days of exhibition were divided nearly equally across the films of all producers. Moreover, I propose that any favoritism would have defeated the very purpose of the vertical integration.[10]

2. The Motion Picture Industry at the Time of *Paramount*

The motion picture industry encompasses three vertically linked activities: production (using actors, sets, and film), distribution (passing motion picture prints from producer to exhibitor and from exhibitor to exhibitor), and exhibition (showing motion picture prints to the final consumer). In any given year, hundreds of movies of various genres, costs, and ex ante unobservable levels of popularity are produced, distributed to local theaters, and exhibited.[11]

At the time of the *Paramount* decrees, there were five fully integrated (production, distribution, and exhibition) and three partly integrated (production and distribution) *Paramount* defendants. The fully integrated defendants—known as the Big Five—were Twentieth Century–Fox, Loew's-MGM, Paramount, RKO, and Warner Brothers (WB). The partly integrated defendants—known as the Little Three—were Columbia, Universal, and United Artists.[12] In the 1940s, Big Five–owned cinemas accounted for about 15 percent of the U.S. total and for about 70 percent of all first-run cinemas (cinemas that received films for exhibition first).[13] Big Five cinemas were the source of nearly half of all film rental revenues (see Appendix to the Brief for the United States of America, Section B, *United States v. Paramount Pictures, Inc.,* 334 U.S. 131 [October 1947]).

Broadly speaking, the Big Five owned two different types of cinemas: movie palaces and ordinary cinemas. The movie palaces (sometimes referred to as metro-deluxe theaters) were the most famous, their distinguishing characteristics being size (seating thousands of viewers), opulence, and—importantly—the fact

[10] These conclusions are consistent with studies of other industries—for example, gasoline by Blass and Carlton (2001) and Barron and Umbeck (1984) and breweries by Slade (1998)—that find that forced divestment of retail outlets (generally justified on grounds of preventing foreclosure) reduced consumer welfare.

[11] Cassady (1958, p. 152) writes, "The major problem of motion picture distribution is to so deploy the several hundred prints of a film that maximum revenue will result from the process."

[12] All eight defendants engaged in distribution, and all but United Artists (UA) engaged in production (UA distributed the films of a small number of affiliated producers). The eight defendants accounted for 71 percent of total feature films released between 1937 and 1946 and almost all of the A pictures (see Conant 1960, p. 45). There was also a large number of much smaller production companies that were not defendants in the case—the *1940 Film Daily Yearbook of Motion Pictures* (Film Daily Press 1940) lists film releases by 29 separate firms. Most of these companies (Monogram and Republic were two of the largest) tended to devote themselves to serials (such as the *Lone Ranger* or *Flash Gordon* films) and B pictures.

[13] The Big Five also owned subsequent-run theaters; see Conant (1960) for details and discussion. First-run theaters were located in prime downtown areas. Second- and third-run theaters tended to be somewhat smaller and were located in less central areas. Fourth- and fifth- (and subsequent-) run theaters were smaller still and found mostly in residential neighborhoods. A large city (like Chicago) might have a dozen runs. For a detailed discussion of the system of "runs, clearances, and zoning," see Huettig (1944, pp. 125–27).

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Table 1
Cinemas Owned by the Big Five

Company	Total Cinemas	DoJ Palaces	*Variety* Palaces
20th Century–Fox	575	19	35
MGM	143	20	29
Paramount	1,165	40	29
RKO	105	19	23
Warner Brothers	443	20	19
Total	2,431	118	135

Note. Department of Justice (DoJ) palaces are metropolitan deluxe theaters listed in the DoJ complaint (*United States v. Paramount, Inc.,* In Equity No. 870273, 63–67 [S.D.N.Y. 1938]). *Variety* palaces are cinemas tracked weekly in *Variety* during January 1940.

that they exhibited nearly exclusively the films of the affiliated studio (typically in a prerelease mode that preceded the official first run).[14] Palace screenings could last for weeks, were tracked nationwide by industry publications (the weekly trade paper *Variety* devoted several pages to them in each issue), and served to influence success in the runs that followed (both by inspiring audiences to see the film and by inspiring exhibitors to show the film in the first place).[15]

Yet, as can be seen in Table 1, movie palaces composed but a small minority of the cinemas owned by the *Paramount* defendants—about 5 percent in terms of numbers (perhaps 2–4 times that in terms of revenue generated). Most Big Five cinemas were ordinary in the sense of not differing from the independent cinemas with which they competed (in terms of size, appearance, or formal booking practices). Ordinary Big Five cinemas were set in less glamorous locales, such as Hickory, North Carolina (the Paramount-owned Center Theater); Florence, Colorado (Fox's Liberty Theater); Appleton, Wisconsin (WB's Appleton Theater); or Brooklyn, New York (RKO's Albee Theater). They were also relatively small, seating 500–1,500 rather than thousands, as did the palaces.[16]

Most germane to this analysis, the ordinary cinemas, unlike the palaces, exhibited films produced by rival film companies, typically renting from all of the

[14] Balio (1976, p. 47) writes, "[A]fter the movie palaces were built, it meant playing a picture before general release in a first-class theater on an extended basis." The original complaint by the Department of Justice did not focus on first-run cinemas per se but rather on ownership of "metropolitan deluxe theaters"—movie palaces (*United States v. Paramount, Inc.,* In Equity No. 870273 [S.D.N.Y. 1938]). An example of an erstwhile movie palace is the Paramount Theater, which was located at the base of the Paramount Building in Times Square and seated 3,600. (For a description, see Paramount Theatre (New York City) [http://en.wikipedia.org/wiki/Paramount_Theater_(New_York_City)].)

[15] A contemporary article on Paramount states, "To get the most out of the picture, the producer must secure its [initial] run in a big house as near its national release date as possible. For not only is the downtown house a big source of revenue, but its influence extends through the newspapers far beyond the market it serves" (see *Fortune* 1937, p. 87).

[16] As of the late 1930s, the average cinema in the United States seated 579, and only .7 percent of all cinemas seated more than 3,000 (see *1938–39 International Motion Picture Almanac* 1938, pp. 930–31).

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Table 2
Bookings for 1937–38 Film Season: Warner Brothers–Owned Ordinary Cinemas

Producer	Screenings	Films	Days Played	% Total Days
Columbia	224	46	1,531	10
20th Century–Fox	294	55	2,367	16
MGM	319	48	2,659	18
Paramount	337	53	2,382	16
RKO	245	46	1,872	12
United Artists	87	18	769	5
Universal	180	39	1,119	7
Warner Brothers	264	56	2,346	16
Total	1,950	361	15,045	100

Note. Data are based on 23 Wisconsin-based cinemas that showed first-run films (WB Archives, University of Southern California Film School).

major producers. This can be seen in Table 2, which shows total days of first-run exhibition by film producer for 23 ordinary WB-owned cinemas over the 1937–38 season (see Section 3 for more detail on these cinemas). Despite WB's ownership, WB releases accounted for only 16 percent of film-showing days, the same as for Paramount and Fox films and less than for MGM films, which accounted for 18 percent of total showing days. Contrast that with the prerelease showings over the same period in the palaces of four of the Big Five, displayed in Table 3.[17] (Look in particular at the WB-owned Strand, which showed only WB films.)

The hypothesis I test in this paper—that cinema ownership supported post-contractual adjustments in film run lengths—applies only to the ordinary cinemas. When a movie palace exhibited solely the films of its affiliated studio, the costs and benefits of adjusting runs ex post were fully internalized. This was not the case with the ordinary cinemas: when an ordinary cinema terminated the run of one producer's film, it (generally) replaced it with a film from a rival producer (as documented in Section 3). This created a problem that, I propose, cinema ownership helped resolve.

3. Ex Post Adjustment in Run Length

The salient contracting problem in motion picture distribution is the need to promote two desirable yet conflicting objectives, commitment and flexibility. The schedule (including number of prints to be made, number of screens to be booked, length of bookings, and so forth) must be established before a film can be exhibited, but until the film is exhibited, demand for the film (and thus how many prints are needed, screens should be booked, and so on) is highly un-

[17] These were four of the five largest (by annual revenue) cinemas in New York City at the time (see *Variety* 1938, p. 8). Seating capacities ranged from 2,800 (the Strand) to 5,800 (the Roxy).

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Table 3

Bookings for 1937–38 Film Season: Big Five–Owned Palaces in Manhattan

Theater	Owner	Films Screened in Prerelease	% Affiliated Studio Films
Capitol	Loew's/MGM	15	100
Paramount	Paramount	11	100
Roxy	Fox	13	75
Strand	Warner Brothers	13	100

Source. Most issues of the *New York Times,* September 1, 1937, to August 31, 1938.

certain.[18] As a result, it may be desirable to renegotiate the contracted-for length of a film's run ex post, after demand for the film has been revealed.[19]

Yet establishing a formal—third-party enforceable—system under which ex ante contracts can be adjusted ex post is not a simple task. Movie exhibition contracts during the Hollywood studio era specified penalties for early termination; indeed, this was the only formal contractual feature that dealt explicitly with ex post adjustments in run length. However, in order to promote efficient ex post adjustments, the penalties would have had to compensate the injured producer without affecting the producer's incentives regarding the ex ante quality of its films and simultaneously render it profitable for exhibitors to engage only in surplus-increasing replacements. My hypothesis is that cinema ownership helped to complete the contract.

Cinema ownership would have played three principal roles. First, it would have reduced the need for film-by-film haggling by functioning as a de facto side payment, allowing vertically integrated producers to share in the surplus generated by the early replacement of their unpopular films.[20] Second, it would have reduced (or eliminated) information asymmetries between producers and exhibitors that could have led to inefficiently too many or too few replacements if a penalty clause alone were employed.[21] Third, it would have rendered the

[18] For a detailed discussion of the problem, see De Vany and Walls (1996). On the link between uncertainty, implicit contracts, and vertical integration, see Klein and Murphy (1997, p. 420), who write that "uncertainty leads to vertical integration because it makes it more likely that the alternative of an explicitly-specified performance contract . . . will move outside the self-enforcing range."

[19] An alternative to ex post adjustments would have been for movie companies to start small—release films in a small number of cinemas first—and then expand outward as popularity is revealed. This is how manufacturers of many consumer goods release new products (adjusting shelf space and the like). And indeed, this is how films were released after theater chains were divested. See test 4 in Section 3.4.

[20] Once producer A integrates into exhibition, when producer B's more popular film replaces A's, the rental revenue of A the producer diminishes, but the attendance revenue of A the exhibitor rises.

[21] For instance, exhibitors may have better knowledge of local demand conditions, while certain producer inputs may be difficult for exhibitors to observe—ex ante or ex post—because so many unidentifiable factors contribute to a film's performance. As a result, if the penalty is set too low (specifically, a cinema pays too little to switch films ex post), the cinema may switch too often (in the sense that the exhibitor's expected revenue increases are not enough to cover the full switching costs). Yet if the cinema pays the full cost of ex post switching (or more), the producer's ex ante incentive to invest in complementary inputs may be reduced.

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informal arrangement self-enforcing (which, because it was informal, it needed to be)—the showing of firm B's film in firm A's cinema (to replace firm A's unpopular film) could be made contingent on allowing firm A's unpopular film to be replaced in firm B's cinemas (and vice versa).[22]

To investigate the relationship between vertical integration and ex post run-length adjustment, I employ a unique sample of booking sheets from 23 WB-owned cinemas in the state of Wisconsin.[23] What makes this data set unique—and allows my test—is that the sheets provide information on the length of runs contracted for as well as on the number of days actually played (for several hundred films exhibited in nearly 2,000 first-run screenings). Obtaining information on how long a film was originally booked to play is extremely difficult (I have found no other sources).[24] As a result, I am able to conduct a test that would not be possible otherwise.

At the same time, it is important to note the data set's limitations. First, it encompasses only cinemas owned by WB. That said, as far as can be determined, WB was no different than any other film company (vertically integrated or independent) when it came to the management of its cinemas and the types of exhibition contracts its cinemas signed with distributors. For example, the appendix to the brief in the *Paramount* case lists the "master agreement" (the terms in and above those of the standard-form exhibition contract) for each and every *Paramount* defendant producer with each and every *Paramount* defendant exhibition chain. The terms employed with WB cinemas are essentially identical to the terms employed with Fox, Paramount, Loew's, and RKO cinemas (see Appendix to the Brief for the United States of America, *United States v. Paramount Pictures, Inc.,* 334 U.S. 131 [October 1947], pp. 61–88). A second, more minor limitation of the data set is the relatively small number of cinemas in the sample—the presence of more cinemas would presumably provide more information. However, the relevant variation (given this paper's objective) resides in the cross-

[22] If ex ante contracted run lengths reflected unbiased expectations about film performance, the hazard rate for terminations should have been roughly the same across the Big Five producers (ignoring differences in the number and nature of films produced). If, in addition, each of the Big Five generated the same amount of revenue from its theater chain (which was approximately so), roughly equal abbreviation rates would have implied roughly equal abbreviation counts. And with roughly equal abbreviation counts, it would not have benefited any individual firm to cheat. If a firm insisted that it be paid the contractually required termination penalty, other firms could have retaliated by following suit, netting out to a transfer of zero. If instead a firm attempted to cheat by abbreviating film runs opportunistically (in response to a bribe, for example), the cheating would have been revealed over time by a higher abbreviation count, and other firms could then have imposed the contractually specified termination fee. An implication is that a prohibitively high early termination penalty (see the discussion that follows) may have been optimal, serving as an effective deterrent to support the implicit contract. (In fact, in this setting, penalties would have netted out to zero and therefore could equally well have been imposed as not, ignoring the cost of imposition.)

[23] The source is the Warner Brothers (WB) Archives at the University of Southern California Film School. See Hanssen (2000) for details.

[24] By contrast, determining the number of days a film actually played at any given cinema is relatively unproblematic (although potentially time-consuming): cinemas have advertised film showings in newspapers for many years, and I exploit this source of information below.

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Table 4
Fixed versus Variable Contractual Run Lengths

Days Contracted	Screenings	Days Contracted	Screenings
1	4	1–3	3
2	28	2–3	433
3	32	2–4	511
4	209	2–5	1
5	22	3–4	596
6	3	3–5	12
7	96	4–5	1
Total fixed	394	Total range	1,556

section of film companies—specifically, whether or not a given producer/distributor owns cinemas—and the composition of that cross section is invariant to the number of cinemas (and over the time period as well).[25]

The sample thus consists of all films booked and screened in the first run by this group of WB cinemas during the 1937–38 film season. The 23 theaters collectively held 1,950 first-run screenings of 361 different films, with the screenings lasting from 1 to 10 days.[26] The fact that the average sample screening lasted 3.4 days provides further evidence that the sample is not atypical—the average screening in all U.S. cinemas at about that time lasted 2.25 days.[27]

There are several features of the booking process worth noting. The first can be observed in Table 4. The vast majority of screenings—1,556 out of 1,950—involved films that were booked for a range of days (2–3 days, 3–4 days), rather than for a fixed number of days. Booking films for a range of days was a logical response to ex ante uncertainty about quality—cinemas were thus contractually permitted to adjust run lengths (to a degree) after observing film performance. Table 4 also illustrates a second notable feature of the booking process: each cinema booked films for many different periods of time (anywhere from 1 to 7 days). The average cinema in the sample booked films for 4.4 different time periods (6.8 when weighted by number of screenings). It appears that (not surprisingly) cinemas booked films that they expected to perform better for longer runs—the more stars a film featured and the longer its running time in

[25] All of the Big Five integrated production/distribution with exhibition between the late teens and the late 1920s. Two of the Little Three—UA and Universal—owned theater chains in the 1920s but sold them off (UA in a dispute among shareholders, Universal after declaring bankruptcy in the early 1930s).

[26] The total includes second features when double features were shown, which was most of the time (in these cinemas and everywhere, the double feature was then the norm). Thus, most of the screenings in the sample involved two films, although the same two films did not always run concurrently (for example, the run of one-half of the double feature might expire or be replaced before the other).

[27] The figure for all cinemas is taken from *1940 Film Daily Year Book of Motion Pictures* (Film Daily Press 1940, p. 45). Because my sample consists only of first-run screenings, it is to be expected that the average run would be longer than the average for all cinemas.

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Table 5
Days Booked versus Days Played

Days Contracted	Days Played			% Within Contract
	<Contract	Contract	>Contract	
1	N.A.	3	1	75
1–3	N.A.	0	3	0
2	4	23	1	82
2–3	66	358	8	83
2–4	12	404	94	79
3	12	20	0	63
3–4	123	349	123	59
4	19	76	115	36
3–5	2	8	2	67
5	7	15	1	65
6	1	2	0	67
7	11	82	3	85
Total	257	1,341	352	69

Note. N.A. = not applicable.

minutes (a proxy for budget), the longer the booked run.[28] In other words, cinemas and producers did not simply follow a mechanistic change policy but attempted to set run length in accord with ex ante expectations about film quality.

Yet foresight being imperfect, there would have been times when replacing a film before the contractually permitted range would have increased attendance revenues. And indeed, as Table 5 shows, early terminations were relatively common—13 percent of screenings (257 out of 1,950) were ended before the minimum period specified in the contract (and 18 percent of screenings were extended).

What happened when a film's run was terminated before the minimum time specified in the contract? There are several possibilities. First, prematurely terminated films may have been replaced by other (presumptively more successful) films released by the same producer, so that the costs and benefits of replacement were fully internalized (as was the case with the movie palaces). The data shown in Table 6 rule this out. The diagonal numbers in bold indicate the proportion of early terminations of a given producer's films followed by replacement by a film from the same producer. As can be seen, replacement by a film from a different producer was much more common. Given there are eight producers (and ignoring the fact that somewhat different numbers of films were booked from different producers), pure chance would indicate that 12.5 percent of the

[28] Using film production cost data for MGM and WB, I find the correlation between cost and film length (in minutes) to be .86, which suggests that running time captures film cost reasonably well (see the more detailed discussion of test 2 in Section 3.2). Films booked for 4 days were 91 minutes long on average, 79 minutes for films booked for 3–4 days, and 71 minutes for films booked for 2–4 days. Only 20 percent of films booked for the shorter periods starred a contract player (an actor under long-term contract with the studio, a status give mostly to A stars), while nearly all the 4-day films starred at least one contract player.

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Table 6
Film Replacement Matrix

Released by	Replaced by: Fox	MGM	Paramount	RKO	WB	Columbia	United Artists	Universal
Fox	**11**	13	22	9	17	13	4	11
MGM	31	**12**	8	8	12	19	4	8
Paramount	8	32	**18**	5	11	13	13	0
RKO	12	20	15	**15**	19	10	0	8
Warner Brothers	18	13	12	15	**10**	15	2	15
Columbia	13	13	6	13	13	**25**	13	6
United Artists	29	0	29	0	0	29	**14**	0
Universal	0	40	0	20	20	0	0	**20**

Note. Data are percentages.

time, a terminated film would be followed by a film from the same producer. The average in the sample is 15 percent, falling to 13 percent when weighted by the number of terminations. Terminated films were not more likely to be replaced by films from the same producer than by films from another producer.

Alternatively, perhaps the cinema replacing the film before its contractually specified period merely paid the penalty indicated in the standard-form exhibition contract, 65 percent of the rentals earned on the last day of showing before termination.[29] Simple calculations suggest that, for this sample of cinemas at least, this would not have been good strategy—early termination increased gross attendance revenues by 17 percent on average, but with the penalty subtracted, early termination had a negative expected value for the cinema.[30] The fact that attendance revenue increased on average after termination is reassuring (suggesting the replacements may have been efficient), but the relatively large number of early terminations—257 out of 1,950 screenings—is difficult to rec-

[29] See almost any issue of the *Film Daily Yearbook* during the 1930s for a copy of the standard-form exhibition contract (for instance, *Film Daily Yearbook* 1937, p. 861). I cannot observe the contracts producers used with these particular cinemas (I have only the booking sheets), but the standard-form exhibition contract formed the basis for exhibition contracts used by these producers elsewhere (see Appendix to the Brief for the United States of America, *United States v. Paramount Pictures, Inc.,* 334 U.S. 131 [October 1947], pp. 61–88). I have obtained copies of exhibition contracts employed by WB and RKO when booking films in other cinemas; they correspond closely to the standard-form contract.

[30] I analyzed the subset of films that were booked for the 2–3-day range (meaning the exhibitor could send the film back after 2 days or keep it for a third) and canceled after the first day (so that I could observe how the film performed in its last screening, specifically, the first day) with the films that replaced them. I found that about two-thirds of replacements were efficient in the sense of generating more revenue than the old film on the day of replacement but that only about 40 percent of replacements were profitable to the exhibitor once the penalty is taken into account. In dollar terms, replacement increased gross attendance receipts on the day of replacement by 17 percent of average daily revenues but led to an average net loss to the cinema equal to 6 percent of average daily revenues.

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oncile with a negative expected value for the cinema. This suggests that the early termination penalty may not have been widely enforced.[31]

Finally, there is the hypothesis I explore here: cinema ownership improved the incentive of fully integrated firms to allow screenings of their films to be adjusted ex post, rendering application of the early termination penalty unnecessary (or redundant). If this hypothesis is correct, early terminations, or "abbreviations," should be more common for the films of the (cinema-owning) Big Five than for the films of the (non-cinema-owning) Little Three.

3.1. Test 1: The Relationship between Abbreviations and Cinema Ownership

As can be seen in Table 7, consistent with this paper's hypothesis, the rate at which Big Five films were abbreviated is nearly 3 times that at which Little Three films were abbreviated—16 percent versus 6 percent.[32]

To test whether the difference is statistically significant, I model the abbreviation process as a binomial distribution with 1,950 independent draws (the sample consists of 1,950 screenings). Of course, for this approach to be valid, abbreviation decisions need to have been made for individual theaters rather than for the entire group of theaters (or some subset of that group). Both information on 1930s-era booking practices and analysis of the WB data indicate this was so.

First, contemporary reports indicate that industry practice was to adjust run lengths in response to theater-level demand. For example, an article on the Paramount Corporation describes the company as "anxious that its theaters maintain their local character and earn their own profits," as a result of which individual Paramount theater managers "may short-half [abbreviate] Paramount pictures, or even cancel one" without having to seek the approval of the head office (*Fortune* 1937, p. 87). Similarly, Lewis (1933, p. 110) states that RKO's theaters had the right to refuse to accept any RKO film that they considered "unsuitable" for local audiences.

Second, data from the WB booking sheets show that different cinemas abbreviated different films. Only 1.6 of the 5.8 cinemas that exhibited the average abbreviated film chose to abbreviate it.[33] The abbreviation decision was not a function of the order in which a film was received—the first cinema to screen

[31] There are no data to allow me to calculate by how much concession revenue—which presumably rises with attendance—might have increased because of a switch to a more popular film. If I employ the present-day estimate that 40 percent of a cinema's total revenues are generated by concessions (Pellettieri 2007) and adjust for the fact that cinemas keep 15–20 percent of box office receipts today, as compared with 70 percent during my sample period, simple calculations suggest the expected loss to the cinema from abbreviation would have been somewhat smaller (closer to 5 percent than 6 percent) but a loss nonetheless. (And this does not account for the marginal cost of concession items.)

[32] Similar, although somewhat smaller, differences hold for extensions of run lengths. Extensions may have been less contentious than abbreviations—if the alternative use of the film print was a second run in a smaller theater in the same geographic zone, the film's producer was unlikely to object.

[33] The average nonabbreviated film was exhibited by 5.3 different cinemas.

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Table 7
Abbreviations: Big Five versus Little Three

	Screenings	Abbreviations N	Abbreviations %
Big Five	1,459	229	16
Fox	294	46	16
MGM	320	26	8
Paramount	337	38	11
RKO	245	59	24
Warner Brothers	263	60	23
Little Three	491	28	6
Columbia	224	16	7
United Artists	87	7	8
Universal	180	5	3
Total	1,950	257	13

the film was as likely to abbreviate it as the second, as the third, and so forth. Nor was it influenced by longer ex ante booking periods—cinemas that abbreviated a given film had booked it for 3.0 days on average, versus a 3.1-day average booking for cinemas that chose not to abbreviate the same film. As a result, although abbreviations accounted for only 13 percent of all screenings (257 out of 1,950, as shown in Table 7), 44 percent of all films screened (158 out of 361) were abbreviated at least once—the 257 abbreviations in the data set were accounted for by 158 different films. Indeed, 94 films (59 percent of total films abbreviated) were abbreviated by only a single theater.[34]

In short, the evidence suggests that the abbreviation decision was made at the level of the local cinema.[35] I therefore test the null hypothesis,

$$\hat{p}_{\mathrm{B5}} = \hat{p}_{\mathrm{L3}},$$

where p_i is the sample proportion of abbreviations of releases by the Big Five (B5) and the Little Three (L3). Because I am testing a null hypothesis of no difference, I use the proportion of abbreviations in the entire sample to calculate the standard deviation. I signify this sample proportion by $\bar{p}$. My test statistic is therefore

$$(\hat{p}_{\mathrm{B5}} - \hat{p}_{\mathrm{L3}})/[\bar{p}(1 - \bar{p})/n_{\mathrm{B5}} + \bar{p}(1 - \bar{p})/n_{\mathrm{L3}}]^{1/2},$$

which is t-distributed with 1,948 degrees of freedom. Plugging in the values

[34] Films abbreviated by a single theater were shown in 5.6 theaters on average, versus 6.0 for the 41 films abbreviated by two theaters and 6.2 for the 16 films abbreviated by three theaters. (There were seven other films abbreviated, by four, five, or six theaters.)

[35] Certainly there would have been coordination across theaters in initial booking decisions (so that theaters very near each other, for example, did not show the same films), and individual abbreviation decisions may very likely have required approval from a higher authority (if for no other reason than as an aid to coordination). Yet decisions to abbreviate clearly differed from cinema to cinema, which suggests that the decisions were inspired by cinema-level conditions. The results of statistical tests are robust to clustering standard errors at the level of the producer.

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$$\hat{p}_{B5} = .16, \qquad \hat{p}_{L3} = .06, \qquad \bar{p} = .13,$$

produces a *t*-statistic of 5.70. The null hypothesis of equal rates of abbreviation is rejected at well under the 1 percent level of significance. Consistent with the hypothesis, films released by the cinema-owning Big Five were significantly—economically and statistically—more likely to be abbreviated.[36]

3.2. Test 2: Abbreviations of Films for Which There Was More Ex Ante Information

Underlying the proposed link between vertical integration and abbreviation rates is a lack of information—not enough was known about films to set run lengths accurately. An indirect test, therefore, is to examine whether abbreviations were fewer where the information problem was less severe. This is only a partial test: if I find that this was so, it does not speak to the rationale for vertical integration per se. However, if I find no relationship between the severity of the information problems and abbreviations, it would suggest that this paper's argument may be incorrect (or incomplete).

To define a set of films for which the information problem was less severe, I make use of the fact that the movie palaces (as discussed above) exhibited films prior to the official first run during what was called a "prerelease." Prereleases lasted for weeks, and information about prerelease box office receipts would have been available prior to the booking of first-run screenings. Only a select few films were exhibited in prerelease—the most expensive, star-filled productions (prestige pictures). I cannot observe precisely which films in my sample were screened in prerelease, but I can observe, for some films, how much the films cost to produce and, for all films, film length in minutes. Film length is highly correlated with production costs and a good indicator of the likelihood of prerelease in its own right—prerelease pictures tended to be blockbusters. Under the assumption that more expensive (and longer) films were more likely to have been shown in prerelease, I should find that more expensive (and longer) films were abbreviated at lower rates than less expensive (and shorter) films.

I have production cost information for most of the MGM and WB films in my data set.[37] Using this cost information, I find that the correlation between production cost and film length is .89 for MGM and .83 for WB (data and calculations available on request). I conduct two tests. First, I examine whether

[36] In addition, I estimated a number of econometric specifications to control for possible confounding factors, including measures of film quality and cost, and cinema and month dummies (results available on request). I also adjusted standard errors to take into account the fact that the relevant variation is at the level of the producer (see Moulton 1990), clustering standard errors, calculating a between estimator, and estimating coefficients using the two-step method developed in Donald and Lang (2007). Whatever the approach, I found a 7–10-percentage-point higher probability of abbreviation for films released by the cinema-owning Big Five.

[37] The sources are the Eddie Mannix ledger (MGM data) and the William Schaeffer ledger (WB data)—see Glancy (1992, 1995) for discussions of these two ledgers. There are films in my WB cinemas data set for which the ledgers do not contain production costs; hence, listed screenings of films released by the two companies are fewer in Table 8 than in Table 7.

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Table 8

Abbreviations by Film Production Cost and Length

		Abbreviations	
	Screenings	*N*	%
Film cost:			
More than $600,000:			
MGM films	104	3	3
WB films	66	11	16
Less than $600,000:			
MGM films	192	23	12
WB films	194	49	25
Film length:			
More than 90 minutes:			
Total films	499	39	8
Big Five films	389	32	8
Little Three films	110	7	6
Less than 90 minutes:			
Total films	1,451	218	15
Big Five films	1,070	197	18
Little Three films	381	21	6

Sources. Eddie Mannix ledger and William Schaefer ledger (film cost), Internet Movie Database (film length).

MGM's and WB's more expensive films were abbreviated at lower rates than their less expensive films. Second, I use the entire sample to investigate whether longer films were abbreviated at lower rates than shorter films and whether this holds equally for films of the Big Five and the Little Three.

I begin by dividing MGM and WB films into two groups: those that cost more than $600,000 to make and those that cost less than $600,000 to make.[38] The result is shown in Table 8. As can be seen, abbreviation rates for the more expensive films were substantially lower than those for less expensive films: 3 percent versus 12 percent for MGM and 16 percent versus 25 percent for WB. This suggests, consistent with this paper's hypothesis, that there were fewer abbreviations where the information problem was less severe.

Table 8 also shows the result when film length is used. Consistent with the results for the cost data, the abbreviation rate for films longer than 90 minutes is 8 percent, versus 15 percent for films shorter than 90 minutes.[39] Even more interesting is the fact that while abbreviation rates vary across the film-length categories for the Big Five—shorter Big Five films were abbreviated at more than twice the rate of the longer Big Five films—they do not for the Little Three. Thus, the difference between Big Five and Little Three abbreviation rates shown

[38] About one-third of films released by the two firms cost more than $600,000 during the 1937–38 season. If I use $500,000 or $700,000 as the dividing line instead, the result is similar.

[39] Films shorter than 90 minutes were very unlikely to have been shown in prerelease. Indeed, films of 80–90 minutes, 70–80 minutes, and less than 70 minutes were all abbreviated at roughly the same rate—about 15 percent.

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in Table 7 is driven by the shortest films—the films for which the least prior information (in the form of prerelease data) would have been available.

3.3. Test 3: Independent Cinemas

The Big Five differed from the Little Three in ways other than cinema ownership—on average, Big Five firms had larger revenues and more (and different) actors under contract and produced more expensive films.[40] In an attempt to isolate the effect of vertical integration per se, I examine a set of nonvertically integrated cinemas. I refer to these as independent cinemas because they were not owned by any film producer/distributor. If my hypothesis about the role of vertical integration is correct, I should find fewer abbreviations among these independent cinemas and less evidence that films of the Big Five and Little Three were abbreviated at different rates.

I do not have access to WB-style booking sheets for any independent cinemas (or any other Big Five cinemas, for that matter). However, in the 1930s, the Sunday *New York Times* (*NYT*) printed a schedule of films to be shown during the following week (Monday–Saturday) in a select group of Manhattan cinemas. Then over the course of that following week, the daily editions of the *NYT* listed the films that actually played in these cinemas each day. By comparing the Sunday schedules to the daily advertisements, I can determine whether a given film played as indicated in the Sunday newspaper or whether it instead ran for longer or was taken off the screen sooner than the Sunday *NYT* specified. In other words, the Sunday schedule can proxy for ex ante bookings and the daily advertisements reveal actual play dates. A difference between the two—a failure to open a movie on a specified date or an opening on an earlier date—would then represent an ex post adjustment.[41]

This test only identifies adjustments made after the Sunday *NYT* had gone to press. However, that should not be a problem—evidence indicates that WB abbreviations occurred after the run of the film had commenced (and thus, in

[40] The difference should not be overstated. For example, Universal (Little Three) and RKO (Big Five) had roughly equal annual revenues (see Appendix to the Brief for the United States of America, *United States v. Paramount Pictures, Inc.*, 334 U.S. 131 [October 1947]), Columbia (Little Three) released as many films between 1935 and 1948 as most of the Big Five producers, and UA (Little Three) released a greater percentage of A films than any Big Five firm.

[41] To illustrate my approach, consider the Sunday, November 21, 1937, listing for the Eighth Street Playhouse, which indicates that the cinema was scheduled to show *Life Begins in College* through Monday and replace it on Tuesday with *Thirty-Nine Steps*, which was to play until Wednesday, to be replaced in turn on Thursday by *Stage Door*. If I find from the daily versions of the *New York Times* that *Life Begins in College* instead played through Tuesday, its run was extended, while if it was replaced by *Thirty-Nine Steps* on Monday, its run was abbreviated. Similarly, if *Thirty-Nine Steps* opened as scheduled on Tuesday but played only 1 day, its run was abbreviated, while if it played through Thursday or longer, its run was extended (and similarly for *Stage Door*). Note that the schedule for the entire week was not always specified—for instance, *Stage Door*'s opening date is listed, but its closing date is not. When that occurs, I consider only whether the film opened on schedule.

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the context of my *NYT*-based test, after the Sunday listings had been printed).[42] Furthermore, Frank Ricketson (1938, p. 111), manager of Fox's West Coast cinemas, indicates that specific bookings were made (typically) on Wednesdays for the following week.[43] In other words, only the week before the screenings would a cinema know what prints would be available and thus what films it would show.[44] If this is so, my analysis of *NYT* data will undercount abbreviations largely to the degree that the abbreviations occurred after Wednesday but before Sunday. Given that the most pertinent new information over this period presumably would have been the response of local audiences to actual screenings (recall that individual WB cinemas abbreviated different films), I should catch most abbreviations.

The *NYT* Sunday listings cover approximately 10 Manhattan cinemas (the number varied slightly from week to week). Eliminating the several art houses (which showed foreign films and documentaries exclusively) leaves seven cinemas for which I compile data.[45] Table 9 contrasts these seven independent cinemas

[42] Because the WB booking sheets do not indicate the dates on which abbreviation decisions were made, I reviewed newspaper advertisements for 17 of the 23 WB cinemas for the period from September 1 through November 30, 1937. The newspapers I examined were the *Kenosha Evening News*, the *Milwaukee Journal*, the *Racine Journal-Times*, and the *Sheboygan Press*. (None of these newspapers published weekly schedules like that published in the Sunday *NYT*, so a similar test was not possible.) I observed two things. First, advertisements posted by WB cinemas seldom revealed the expected length of a film's run (the date the film would be taken off the screen), while advertisements posted by independent cinemas often did. The difference is understandable in a world where ex post adjustments could be made by WB cinemas but not by independents—lack of specifics would have provided the WB cinemas with the flexibility to alter run lengths without misleading potential viewers, while independent theaters had less to lose and more to gain (in terms of helping customers plan their visits) from specifying the precise length of a run. Second, on the rare occasion that a WB cinema advertisement did specify the length of a film's run (typically when an especially noteworthy film was to open the following week) and the run was—according to WB booking sheets—abbreviated, the earlier advertisements (printed on the day of the film's opening, for example) specified a different termination date than later advertisements, indicating that the decision to alter the run length was taken after the screening of that film had commenced. To give a specific example, on page 17 of the Friday, September 24, edition of the *Sheboygan Press*, the advertisement for WB's Rex Theater states, "Coming next Friday [October 1]—Deanna Durbin in *100 Men and a Girl*" (Deanna Durbin was a hugely popular star). However, the Rex advertisement in the Wednesday, September 29, edition states instead that *100 Men and a Girl* will start on Thursday (September 30), 1 day earlier. And indeed, according to the WB booking sheets, the preceding film, *Women Men Marry*, was taken off the screen 1 day early (in other words, abbreviated).

[43] Cinemas would contract for a slate of films at the start of the film season but would not agree to the precise films or dates until just before a film print was available; see Hanssen (2000) and Kenney and Klein (2000) for detailed discussions of film-booking practices during the Hollywood studio era. A similar approach is employed today—agreements to show films are made well in advance of the film's release, with specific dates set close to the release time (see Fellman 2004).

[44] Under the terms of the standard-form exhibition contract, the cinema would select play dates over rolling 30-day periods—as new prints became available, show dates would be penciled in. However, the tendency was (not surprisingly) to push forward the screenings of films expected to perform exceptionally well.

[45] These cinemas are the Eighth Street Playhouse, the Gramercy Park, the Granada, the Little Carnegie, the Plaza, the Sixty-Eighth Street Playhouse, and the Translux.

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Table 9
Independent Cinemas versus Warner Brothers–Owned Cinemas

	Cinemas	Average Capacity (Seats)	Screenings	Films	Average Screening (Days)	% Screenings of Big Five Films	Average Number of Screening Periods
Independent	7	890	485	178	3.43	74	6.0
Warner Brothers	23	1,068	1,950	361	3.39	75	6.8

with the 23 WB-owned cinemas.[46] As can be seen, the average independent cinema is slightly smaller than the average WB cinema (in terms of seating capacity), although it probably earned similar revenues.[47] The average independent cinema screening lasted 3.43 days, versus 3.39 days for the average WB cinema, and booked films for six different time periods, versus 6.8 for the average WB cinema. Independent and WB cinemas showed Big Five and Little Three films in almost precisely the same proportions—Big Five films composed about 75 percent of the screenings of each. Finally, nearly three-quarters of the films screened by independent cinemas were also screened by WB cinemas. In short, the two sets of cinemas appear sufficiently similar to justify comparison.

Table 10 presents data on screenings by film producer for these seven independent cinemas, including the number of instances in which a film played fewer days than indicated in the Sunday *NYT* listing.[48] There are two things in particular to note. First, the frequency of abbreviations is quite low relative to that in the WB cinema data—roughly 3 percent among the independent cinemas versus 13 percent for WB cinemas.[49] Second, in sharp contrast to the WB cinemas, the independent cinemas abbreviated films of the Big Five and Little Three in equal proportions.[50] The Big Five–Little Three differential so apparent among the vertically integrated WB cinemas is simply absent among independent cinemas, consistent with this paper's hypothesis.

Finally, there is an extraordinary difference between independent and WB-owned cinemas. As shown in the last columns of Table 10, among the inde-

[46] The set of independent Manhattan cinemas held fewer screenings in total and exhibited fewer films than the WB cinemas in my data set (see Table 2), but the difference is roughly proportional to the difference in cinema numbers (the average film in the WB sample was shown by seven of the 23 cinemas). In addition, *NYT*'s reporting for a few of the cinemas was sporadic.

[47] Ticket prices in Manhattan were the highest in the country—nearly 13 percent of total U.S. film rentals emanated from the city of New York, more than twice its proportion of the population (Huettig 1944, p. 79). For seating capacities for most of these cinemas, see Cinema Treasures, Number of Seats (http://cinematreasures.org/seats).

[48] It should be noted that these do not appear to have been simple mistakes in the Sunday listings—the daily advertisements on the days of (or just preceding) the abbreviations include phrases such as "special showing" or "held over by popular acclaim."

[49] If my hypothesis is correct, the more appropriate comparison would be with abbreviations of films released by the nonintegrated Little Three, which was 6 percent among the WB cinemas.

[50] Even if using the Sunday *New York Times* as a proxy for bookings undercounts abbreviations, there is no reason why the undercount should be greater for films released by the Big Five.

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Table 10
Screenings by Independent Cinemas, 1937–38 Season

Studio Releasing Film Screened	Screenings		Films		Abbreviations		Return Engagements	
	N	%	*N*	%	*N*	% of Screenings	*N*	% of Screenings
Columbia	24	6	8	4	1	4	4	17
Fox	83	20	34	19	3	4	4	5
MGM	93	22	45	25	3	3	7	8
Paramount	37	9	24	13	2	5	3	8
RKO	44	11	17	10	1	2	3	7
United Artists	61	15	18	10	1	2	3	5
Universal	17	4	5	3	1	6	6	35
Warner Brothers	57	14	27	15	0	0	3	5
Total	416	100	178	100	12	3	33	9
Grouped:								
Big 5	314	75	147	83	9	3	20	7
Little 3	102	25	31	17	3	3	13	13

Source. Most issues of the *New York Times*, September 1, 1937, to August 31, 1938.

pendent cinemas, nearly one-tenth of screenings were return engagements—films that had completed a run at that same cinema, generally a month or two earlier, and then returned to play again. Return engagements are simply not seen among the WB cinemas, and with good reason—shipping a print back and forth was expensive, and favorable audience response (driven by information cascades or bandwagon effects) could have dissipated by the time a film returned. It would appear preferable, all else equal, to keep the film on the screen until the audience tired of it, and that is what the WB cinemas did. But all else was not equal if the independent cinema was limited in its ability to adjust the length of film runs ex post. Recall that the formal exhibition contract allowed a film's run to be abbreviated only on the payment of a penalty, and the penalty appears to have been large. Thus, instead of extending the showing of film X—which would necessarily have required abbreviating the showing of film Y or Z—it was evidently more profitable for an independent cinema to simply schedule the film for another, later run.[51] Indeed, the mere existence of return engagements indicates that, for independent cinemas, there was a demand for ex post flexibility that could not be achieved through adjusting run lengths.

In short, analysis of independent cinemas—cinemas that were not vertically integrated into production/distribution—reveals major differences from the WB-owned cinemas. These differences suggest that more than the greater value of Big Five films (or some related factor) is required to explain the differential in abbreviation rates found in the analysis of WB cinemas.

[51] Exhibition contracts allowed a cinema to cancel up to 10 percent of booked films in any given season, providing room to slip in especially popular films for a second screening. See Hanssen (2000) for more details.

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3.4. Test 4: Paramount's Aftermath

The *Paramount* decision was handed down at a time of tremendous social and economic change—servicemen and -women were returning home from war, the baby boom had commenced, the suburbs were growing rapidly, and (very importantly) the popularity (and prevalence) of television was on the rise. The motion picture industry changed dramatically too. As Balio (1990, p. 3) writes,

> Beginning in 1947, Hollywood entered a recession that lasted for ten years; movie attendance dropped by half, four thousand theaters closed their doors, and profits plummeted. In foreign markets, governments erected trade barriers to limit the importation of motion pictures. Thus, instead of enjoying sustained prosperity after the war, which many had predicted, Hollywood retrenched. Production was severely cut back; "B" pictures, shorts, cartoons, and newsreels were dropped, and the studios concentrated their efforts on fewer and fewer "A" pictures. The studio system went by the board as companies disposed of their back lots, film libraries, and other assets and pared producers, stars, and directors from their payrolls.

Nonetheless, for the most part, the *Paramount* defendants maintained their dominant position in the industry, now as distributors rather than as producer/distributors, albeit distributors who financed film production.[52] But in the absence of cinema ownership, how were ex post adjustments of run lengths handled? The answer is that exhibition contracts changed in ways that made run-length adjustments less costly.[53]

The pre-*Paramount* exhibition contracts specified how long a run would last and included a penalty clause for early termination, but little else—ex post adjustments were handled outside the formal framework of the contract. The post-*Paramount* exhibition contracts also specified a basic run length and a penalty for early termination but for the first time included several clauses that formally linked the duration of the run to the performance of the film. Foremost was the holdover clause, which automatically extended the length of a screening if weekly attendance revenues exceeded a specified target (which differed by cinema). The holdover clause was used on occasion during the Hollywood studio era, primarily for prereleases in independent movie palaces (those not owned by the Big Five), where runs could last for weeks. However, it was not part of the standard-form exhibition contract and, therefore, generally would not have been employed in contracting with ordinary first-run theaters (such as those in my samples).

[52] Crandall (1975, p. 52) reviews the evidence for the post-*Paramount* period and concludes, "Distributors [principally, the former *Paramount* defendants] still control the number of productions and often exert an influence over the artistic details since it is they who underwrite the pictures." Similarly, Balio (1990, p. 10) states, "By 1970, the majors functioned essentially as bankers supplying financing and landlords renting studio space. Distribution now became the name of the game . . . but as financiers, the studios were able to retain ultimate discretionary power."

[53] See De Vany and Eckert (1991) and De Vany and Walls (1996) for more detail on these practices. For a copy of a circa 1980 exhibition contract, see May (1983).

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Given widespread use of the holdover clause, it became less important to agree to a specific duration for a film run (recall that in the pre-*Paramount* days, cinemas booked films for varying periods, depending on how the film was expected to perform), and an initial run of 1 week became the norm. In addition, the number of screens on which a film was shown could be more quickly adjusted, because by the mid-1950s, the elaborate system of runs had shrunk to a first run and a subsequent run (smaller cinemas either upgraded or disappeared), and the number of films released had fallen too.[54] Thus, film rollouts were more gradual—commencing in large cities and expanding (or not) as the popularity of the film was revealed. It also became common for a distributor to allow a cinema to split scheduled screening times between motion pictures (the alternate feature being supplied by the same distributor) if an originally booked film performed poorly. The appearance of the multiplex (multiple-screen cinema) in the early-1960s furthered the process by allowing cinemas to open films on several screens (or in larger screening rooms) and downgrade to fewer screens (or smaller screening rooms) as dictated by consumer demand.[55]

In an earlier paper (Hanssen 2000), I concluded that the booking practices that developed after the *Paramount* decrees managed to replicate the outcome of block booking, although presumably at a higher cost. The same appears to have occurred with respect to managing postcontractual revelation of information on film quality. Whether these later practices were as effective as cinema ownership cannot be determined—certainly, film companies fought the forced divestiture of their theater chains vigorously. That said, the film industry has changed profoundly since 1948. Several firms reintegrated exhibition with production/distribution (a legal stricture binds only a subset of the *Paramount* defendants) but have since disintegrated voluntarily.[56] No fully integrated company exists today.

4. Conclusion

During the Hollywood studio era, the largest motion picture producers owned cinemas. In this paper, I have sought to explain why. Investigating a unique sample of cinema booking sheets from the 1930s, I find evidence that integration

[54] By 1955, the number of four-wall cinemas had fallen by nearly 3,000 units, 17 percent of the 1948 total, and by 1960, by more than 5,000 units, 30 percent of the 1948 total. (Numbers of four-wall cinemas actually peaked in 1945 and declined subsequently.) Some of the decrease was offset by the substantial increase in the number of drive-in theaters over the same period. Even counting drive-ins, the total number of cinemas decreased by nearly 10 percent between 1948 and 1960. See Steinberg (1980, pp. 40–41).

[55] According to Steinberg (1980, p. 39), the first multiplex was built in 1963 in Kansas City, and by the late 1970s, multiplexes accounted for about 25 percent of all screens.

[56] For example, from the mid-1980s until 2002, the cinema chain Loews and film producer/distributor TriStar Pictures shared common ownership (and, after purchase by Sony, were linked with Columbia Pictures too). However, in 2002 the Loews chain was spun off to private investors.

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supported extracontractual changes in film run lengths, a desirable but potentially difficult to implement feature of film exhibition arrangements.

An interesting implication of this analysis is that the antitrust authorities who prosecuted the *Paramount* case were not as far off in their accusations—that cinema ownership helped support a collusive conspiracy—as one might think. If this analysis is correct, the Big Five did cooperate in a manner that raised their collective profits. The cooperation did involve differential treatment of films released by fellow members of the Big Five. And the ownership of cinema chains did serve to underpin the cooperation. However, antitrust enforcers erred on one rather important point—instead of reducing the number or quality of available films by foreclosing competition, the cooperation allowed film companies to better match films to audiences so that consumers could see more of the movies they valued most.

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