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Uniform prices for differentiated goods: The case of the movie-theater industry

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Abstract

Since the early 1970s, movie theaters in the United States have employed a pricing model of uniform prices for differentiated goods. At any given theater, one price is charged for all movies, seven days a week, 365 days a year. This pricing model is puzzling in light of the potential profitability of prices that vary with demand characteristics. Another unique aspect of the motion-picture industry is the legal regime that imposes certain constraints on vertical arrangements between distributors and retailers (exhibitors) and attempts to facilitate competitive bidding for films. We explore the justifications for uniform pricing in the industry and show their limitations. We conclude that exhibitors could increase profits by engaging in variable pricing and that they could do so more easily if the legal constraints on vertical arrangements are lifted.
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> "[A]dmission prices for films that are not hits and that leave theaters largely empty do not result in admission-price cutting. The exhibitors generally consider demand to be relatively inelastic. The question is whether they have tested this hypothesis with price changes for films of different quality."
>
> – Michael Conant[1]

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[1] Conant (1981), p. 103.

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"This is a pricing model which makes no sense, and I believe the entire industry should revisit it."

– Edgar Bronfman, Jr.[2]

"First thing is price elasticity – i.e. you reduce the price of something and people will consume more of it. Then, we have the ability to yield-manage, to charge prices according to demand . . . I'm taking that idea to cinema."

– Stelios Haji-Ioannou[3]

1. Introduction

Since the early 1970s, at any given movie theater, one price has been charged for all movies, seven days a week, 365 days a year. Most theaters employ some form of price discrimination, such as discounts for seniors and students. But with the major exception of matinee rates, each moviegoer pays the same price for all movies at any time. This business model of uniform pricing for differentiated goods is puzzling, since one would expect to observe price differentiation across movies and across show times (Surowiecki, 2004, pp. 98–101). Several industry practitioners and scholars have argued that such variable pricing schemes would be "too complex [and] could cause confusion in the minds of consumers" (Litman, 1998, p. 45). This belief, however, is not supported by the industry's experience that for many decades engaged in sophisticated price discrimination and price differentiation practices (Orbach, 2004). This paper analyzes the possible reasons for the persistence of the uniform pricing regime in the motion-picture industry during the last three decades.

In addition to its peculiar pricing practices, the motion-picture industry is characterized by an idiosyncratic legal regime that imposed strict constraints on possible vertical arrangements between distributors and retailers (exhibitors). This regime was laid out by the Supreme Court in *United States v. Paramount* (1948)[4] and the consent decrees that were issued pursuant to this decision. In *Paramount*, the Justice Department sought to break up a cartel of eight distributors that controlled the production, distribution, and exhibition of movies in the United States.[5] These distributors engaged in price fixing of admission prices, allocated geographic areas of distribution, and engaged in a few other collusive practices. In an attempt to open the industry to competition, the *Paramount* court ordered the distributors to divorce their exhibition businesses and prohibited various forms of vertical arrangements between distributors and exhibitors. The three key prohibitions were: (i) a prohibition against expansion into the exhibition segment,[6] (ii) a prohibition against

[2] CEO of Seagram, at the time the parent company of Universal Pictures. March 31, 1998, at the annual conference of the motion-picture industry (Shapiro, 1999).

[3] Founder and Chairman of *easyGroup* and *easyCinema*. *easyCinema* opened its first theater on May 26, 2003. The price of tickets at easyCinema is determined by the time of booking (Business Week, 2003).

[4] 334 U.S. 131 (1948).

[5] For detailed discussions and analyses of the motion picture industry prior to the *Paramount* case and of the case itself, see Conant (1960) and Orbach (2004).

[6] In the 1980s, the prohibition against integration of distributors and exhibitors was somewhat relaxed, but distributors are still not allowed to vertically integrate theaters.

intervention in box-office pricing,[7] and (iii) a prohibition against any movie licensing negotiation, which is not in the form of theater-by-theater and movie-by-movie. Furthermore, in 1968, the Justice Department entered into consent decrees with the *Paramount* defendants to limit to three the number of films which they could blind bid per year.[8] The decrees expired in 1975 and within a few years 24 states enacted anti-blind bidding statutes that banned any form of blind bidding.[9] More than 50 years after the *Paramount* decision was handed down, its proscriptions, as well as the state anti-blind bidding legislation, are still in effect. The purpose of these restrictions was to foster competition and prevent market foreclosure through an attempt to maintain a competitive, informed spot market for movies. The *Paramount* Court, Justice Department, and state legislators seemed to believe that the adopted legal rules could facilitate competitive bidding for films. To the best of our knowledge, in no other industry are such legal constraints on the relations between distributors and retailers imposed, nor have ever been imposed.

To be sure, uniform pricing for differentiated goods is prevalent in many industries. There are no price differences among long-distance calls of the same carrier. At the grocery store, all Häagen-Dazs' flavors carry an identical price tag. We pay the same price to see the Los Angeles Lakers and the Charlotte Bobcats when they come to town, although the Lakers' games are often sold out and the Bobcats' games almost never.[10] In the same spirit, online music vendors price all songs uniformly.[11] In many instances, there are solid economic explanations for uniform pricing (McMillan, 2005). Typically, transaction costs, such as information and menu costs, and direct regulatory constraints on pricing account for a significant portion of the phenomenon.[12] These explanations and others do not apply to the movie-theater industry.

We study the practice of uniform-pricing in movie theaters and explore the existing justifications for its persistence. These justifications include concerns that variable pricing would enable exhibitors to misappropriate box-office revenues at the expense of the distributors, a double-marginalization problem, perceived fairness, uncertainty, and transaction costs. Orbach (2004) shows that, in the past, exhibitors profitably employed variable-pricing strategies, although all the primary justifications for uniform pricing had already existed. The two major differences between the era when exhibitors employed variable pricing and the present era are the rise of the multiplexes and the legal constraints on vertical arrangements between

[7] Pursuant to *Paramount*, distributors introduced "per-capita requirements" in licensing agreements that set minimum amounts paid to a distributor for any patron who watches the licensed movie. Practically, the per-capita requirements affect box-office pricing, but they were upheld by the Ninth Circuit. General Cinema Corp. v. Buena Vista Distrib. Co., Inc., 681 F.2d 594 (9th Cir. 1982).

[8] "Blind bidding" is the practice whereby a distributor requires exhibitors to bid on the licensing of a motion picture without first having an opportunity to view the film. United States v. Paramount Pictures, Civil Action 87-273 (S.D.N.Y. 1968). RKO Radio Pictures Inc., one of the *Paramount* defendants, ceased to operate as a distributor and, therefore, was not a party to the 1968 consent decrees.

[9] *See infra* Section 3.

[10] For recent trends in sports leagues towards variable-price ticketing, see Morrel (2003).

[11] The practice of uniform prices in the music-download industry is presently under investigation. The suspect of law enforcers is that the music labels enforce uniform pricing through sellers' most-favored-nation clauses (Smith, 2006).

[12] Barro and Romer (1987) study why ski and amusement parks do not regulate queues in peak times by raising prices.

distributors and exhibitors. We explain why the rise of the multiplexes is less likely to explain the uniform-pricing regime and argue that the constraints on vertical arrangements may have played a role in the transition to uniform pricing and in the persistence of the practice.

The paper continues as follows. Section 2 presents the puzzle of uniform prices at the movie theater, studies the patterns of the demand for movies at the theater, and provides general guidelines for the incorporation of anticipated demand patterns into ticket-pricing policies. Section 3 surveys the history of movie pricing since the early days of the motion-picture industry until the current pricing regime, with a focus on the feasibility of profitable variable pricing. Section 4 explores the actual and alleged causes of the persistence of the uniform-pricing regime, and Section 5 concludes.

2. The puzzle

2.1. General characteristics of the puzzle

A movie theater offers a spectrum of products, each of which is defined by the movie and its show time. On this spectrum of differentiated products, the short product life cycle of movies and uncertainty regarding their general appeal make it difficult to estimate accurately demand elasticities. Nevertheless, exhibitors can distinguish among certain clusters of products for pricing purposes. For example, while many moviegoers may be nearly indifferent between watching a particular movie on Tuesday or Wednesday, most moviegoers have strong preferences between shows of Friday night and Monday morning. Similarly, while many moviegoers may view two Christmas movies as very similar, most moviegoers are likely to have tastes for genres. Put simply, moviegoers have preferences for show times and for movies and, when making their consumption choices, the products they compare are particular movies in particular show times. With the exception of matinee discounts, the price to the consumer does not reflect these dimensions of product differentiation. Moviegoers normally pay one price for all movie tickets, regardless of the popularity of the movie, the day of the week, and the time of the year.

The analysis of the price uniformity in the motion-picture industry calls for a distinction between two puzzling dimensions of the uniform pricing regime in the motion-picture industry, the movie puzzle and the show-time puzzle.

1. *The movie puzzle* refers to price uniformity across movies that run at the same time. Namely, the situation of two movies that are playing simultaneously at the same theater and are priced uniformly, even when one movie has just been released, is much more popular, or occupies the screen for more time.
2. *The show-time puzzle* refers to the lack of price differentiation between weekdays and weekends or across seasons.[13] That is, price uniformity across show times (with the prime exception of matinees).

[13] A large literature documents seasonal pricing in various industries, such as clothing, appliances, and food products. See, for example, Pashigian (1988), Warner and Barsky (1995), MacDonald (2000), Chevalier, Kashyap, and Rossi (2003), and Nevo and Hatzitaskos (2005).

The importance of the distinction between the movie and the show-time dimensions is that, as we explain below, although some of the explanations of uniform pricing may account for price uniformity along one dimension or for subsets of movies and show times, they cannot justify the general practice. For example, demand uncertainty may justify uniform prices for most movies, but can hardly explain price uniformity across show times. In the same spirit, demand uncertainty may justify uniform prices for many movies, but does not exclude the possibility of charging premia for event movies or giving discounts for documentaries.

It is noteworthy that the price uniformity that we address in this paper differs from price discrimination, which is common in the industry. Movie theaters employ several third-degree price discrimination schemes, by offering different prices to different types of moviegoers, primarily through discounts for seniors, students, children, and veterans. These discounts, however, are offered uniformly for all movies and all show times, so that each moviegoer essentially pays one admission fee. The major price differentiation scheme, low matinee rates, targets individuals who are flexible during the day and do not necessarily perceive moviegoing as an evening entertainment outlet. It is still unexplained why exhibitors offer matinee rates on weekends and holidays, when the demand for movies is likely to be less elastic than it is on regular weekdays. A less common price-differentiation practice is weekday passes, which offer moviegoers packages of several tickets that they can use on weekdays but not during the first week in which a movie plays. Like matinees, weekday passes mostly target specific audiences with peculiar characteristics and sensitivities. Most moviegoers are not affected by these forms of price differentiation.

There are several factors that deepen the puzzle of (almost) uniform pricing at the box office. First and foremost, the decision makers – the exhibitors – are aware of the product heterogeneity. Their share of box-office receipts is not fixed and they may pay distributors a greater share for films that are expected to be particularly profitable.[14] Second, exhibitors employ various indirect price differentiation schemes. For example, they decide which movies will be shown in particular show times. Thus, when the number of movies that play at a theater is larger than the number of screens in that theater, some movies run in less popular show times. Similarly, exhibitors' decisions about how to allocate movies to screens constitute another form of indirect price differentiation, because in most multiplexes the auditoriums vary in their screen size, quality of sound systems, and seat condition. The question, therefore, is why exhibitors employ such rudimentary forms of indirect price differentiation, while forgoing simple and potentially more profitable strategies of variable pricing.[15] Third, the existing forms of price discrimination and cross-theater price variation indicate that theater chains invest time and resources in devising and administering

[14] For a description of the licensing agreements, see Orbach (2004).

[15] It is noteworthy that since 1996, two major theater chains have charged higher prices on weekends. Cinemark, the third largest circuit in the U.S., charges $0.25 to $0.50 more for Friday and Saturday evening shows in some of its theaters than it charges on other days of the week. For the first matinees on Monday through Thursday, Cinemark charges $0.50–1.50 less than for later matinees. Century Theaters, the seventh largest circuit in the U.S., charges between $0.25 and $0.50 more for Friday and Saturday shows in some of its theaters than it charges on other days of the week. Since 2001, Lowes Cineplex, the fifth largest circuit, employs similar weekend pricing schemes in certain cities.

pricing policies.[16] The investments in pricing strategies suggest that exhibitors consider, at least occasionally, the potential advantages of price differentiation. Other factors that deepen the puzzle of uniform pricing are that: (i) admission fees are not regulated; (ii) most theaters in the United States possess some geographic market power either because they are the only theater in town, or because the movies they show are licensed to them exclusively in their geographic area; (iii) in the movie-theater industry, season tickets and subscriptions that may justify uniform prices are not offered;[17] (iv) administering variable pricing may involve some costs, but (as discussed in Section 4.2) such costs are unlikely to be prohibitive. These industry characteristics and others are discussed in greater detail below.

2.2. *Regularities in the demand for motion pictures*

An empirical evaluation of variable pricing requires estimation of demand elasticities, which cannot be undertaken due to the long persistence of uniform prices in the industry. In this section we discuss the enormous variation in the *total* demand along several dimensions and argue that such variation reflects likely variation in demand elasticities. Almost any model of optimal pricing would imply that such variation in demand elasticities translates to variable pricing.[18] The anecdotal evidence we provide in the next section supports this conclusion. The quantitative analysis presented in this section is based on data for all the movies released in the United States between the years 1985 and 1999 (3,523 movies).[19]

The demand for motion pictures varies along three major dimensions: (i) the movie dimension; (ii) the show time dimension; and (iii) the screen life dimension. Our analysis suggests that price differentiation along the contours of these dimensions is likely to increase revenues. Certain characteristics and patterns of demand, we argue, can be identified with sufficient certainty to profitably design variable pricing regimes, although exhibitors probably cannot take full advantage of all the observed demand patterns.

2.2.1. *Specific movie demand*

While the motion-picture industry is notorious for the uncertainty surrounding the success of newly released films, there are several ways by which expected levels of box-office

[16] Admission prices vary across cities and within the same town (Davis, 2005). In certain cities, admission prices are three times higher than they are in other cities. Similar price differences exist between first- and second-run theaters. Less considerable, yet material, price variation exists across theaters within the same geographic area, according to their location, design, physical conditions, and other factors.

[17] The importance of season tickets is a typical, and economically sound, explanation for the common practice of uniform pricing in sporting events. For example, season tickets account for more than half of all ticket revenues of the New York Mets (with other multi-game plans accounting for a quarter), making variable pricing less important (see Asker and Cabral, 2005).

[18] While the focus here is on variation in demand elasticities, variation in marginal costs across movies and show times is also present, and should, by itself, make variable pricing profitable. One important factor for variation in marginal costs arises from the typical movie licensing agreements, which stipulate a declining revenue share of the distributor over the movie's run.

[19] See Einav (2007) for a detailed description of the data.

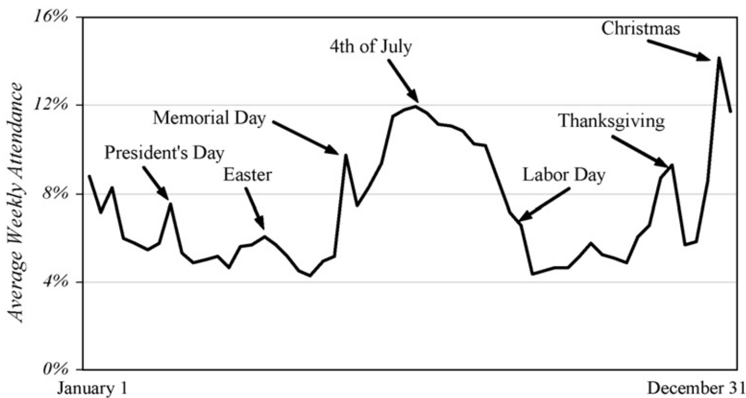

Fig. 1. Seasonality in movie attendance (1985–1999). The figure of Average Weekly Attendance represents the average share of American population that attended movie theaters in a given week. *Source*: Einav (2007).

revenues can be estimated. For example, production costs and gross box-office revenues have been found strongly correlated, with simple correlation coefficients of 0.5–0.7 for each year between 1985 and 1999 (Einav, 2007; Prag & Casavant, 1994). Sequels perform quite similarly compared to the originals, at least in terms of order of magnitude (Ravid, 1999). Furthermore, much of the uncertainty regarding a movie's success is revealed after its first weekend on the screens (Einav, 2007), so at least in principle admission prices can be adjusted on the first Monday after the release date.

2.2.2. Show-time demand

Attendance patterns during the week and across seasons are rather predictable. The number of moviegoers on an average weekend day (Friday through Sunday) is approximately 3.5 times higher than the number of moviegoers on an average weekday. This pattern suggests that the demand for movies on weekdays may be more elastic than the demand on weekends. Similarly, and as shown in Fig. 1, movie attendance during the summer and holidays is much higher than during the rest of the year.[20] Einav (2007) estimates that about two-thirds of this seasonal variation can be attributed to seasonal variation in demand, with the remaining driven by more attractive movies released in high-demand seasons.

2.2.3. Demand over the movie's screen life

The demand for movies strongly diminishes with the movie's screen life. Fig. 2 presents the average accumulation of box-office revenues for all the movies released in the United States between 1985 and 1999. It illustrates how the demand for a given movie declines over its screen life. A more detailed analysis shows that screen lives of successful movies tend to be longer than those of less popular movies, and the revenues of the former tend to decay in a slower rate over time.

[20] Similar pattern for the years 1969–1984 can be found in Vogel (2001).

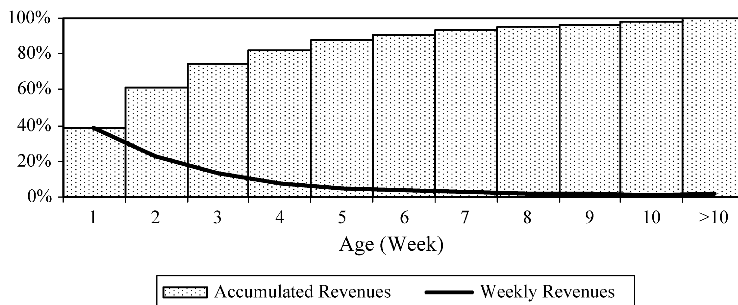

Fig. 2. Accumulation of revenues over a movie's screen life. *Source*: Einav (2007).

2.3. Anecdotal evidence for profitable deviations from uniform prices

Anecdotal evidence indeed indicates that variable pricing could increase revenues. In 1970, several local exhibitors in Washington, DC, slashed their admission fees on weekdays by 67% and, as a result, significantly increased their box-office revenues and more than doubled their popcorn sales (Headley, 1999). During the 1980s and 1990s, several theater chains revived the practice of discount days, but, despite positive results, these policies were abandoned because of per-capita requirements by distributors (King, 1992).[21] In the late 1990s, this policy emerged again, and today many theaters have discount days in which they offer tickets at reduced admission prices. This practice has also brought strong financial results in many markets in Asia, Australia, Europe, Latin America, and New Zealand.

International markets provide a few other inspiring examples. In 2000, Zhao Guoqing, a Chinese exhibitor, gained an article in *Time Magazine* for his rebellious and highly profitable act of cutting admission prices in his theaters by 67% (Jakes, 2000). In Australia, during the Sidney 2000 Olympic Games, prices were cut aggressively (Groves, 2000). In Japan, tickets for *Jurassic Park* were profitably sold for a premium of 67% (Mackenzie, 1993) and tickets for *Austin Powers* were profitably sold at 45% discount to attract young audiences (Watts, 1999). Similarly, in the Czech Republic, significant premiums (30–50%) were charged for *Independence Day*, *Evita*, and *Titanic*, boosting box-office revenues (Meils, 1997, 1998).

To summarize, the practice of uniform prices at the box office is puzzling even in light of sporadic anecdotal evidence. The next section describes the history of pricing in the motion-picture industry to illustrate further the feasibility of profitable variable pricing.

3. An historical perspective

This section summarizes the history of movie pricing and draws on Orbach (2004), who provides a detailed study of the history of pricing in the motion-picture industry. It is difficult to obtain reliable historical data on box-office pricing and the only data we could

[21] *See supra* note 7.

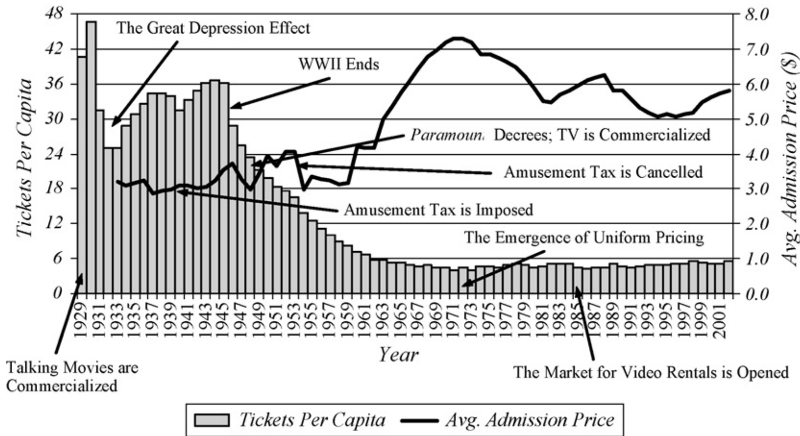

Fig. 3. Theater attendance per capita and average admission prices (1929–2002). Prices are adjusted to 2002. *Source*: Orbach (2004).

find was on national average box-office prices. Fig. 3 summarizes available data on per-capita attendance and average admission prices. We offer this information to illustrate the response of ticket pricing to various historical developments.

3.1. Early periods of uniform pricing

In the history of the motion-picture industry, movie ticket pricing was uniform in two periods prior to the present era. First, in the short era of the peepshow machines (1894–1895), movies were priced at one or five cents (Musser, 1990, pp. 12–89; Robinson, 1996, pp. 2–51). Movies in that era lasted less than a minute, had no plots, and attracted patrons' attention primarily due to the technological novelty of moving pictures. The peepshow machines allowed only one patron at a time to watch a movie and, as such, were a costly distribution channel for mass entertainment. To cut the operation costs for early exhibitors, peepshow machines were operated by coins, so their prices were uniform due to a technological constraint. Uniform pricing during that era was hardly surprising, given the technology characteristics and the demand for moving pictures rather than for content. The introduction of commercial projectors in 1896 enabled mass exhibition of movies and lead to new pricing models that utilized various forms of price differentiation (Robinson, 1996, pp. 45–87; Stones, 1993, pp. 5–18). Then, in 1905 the nickelodeon business model took over the industry and re-established uniform pricing, initially at a level of five cents per movie and subsequently at a level of ten cents. This era of uniform pricing governed for approximately 10 years. The nickelodeon business model simplified moviegoing and relied on mass consumption. The nickelodeons were located in corner stores, had several daily programs of very short movies of one reel, and were frequented by patrons on the way to work, on a lunch break, when returning home, or later in the evening. Charging nickels and dimes facilitated fast turnover of patrons, as it saved transaction time (Gomery, 1992, pp. 4–16; Merritt, 1985). The production and distribution segments during the nickelodeon era were controlled by a "Trust"

– the Motion Picture Patents Company and its sister company, the General Film Company (Cassady, 1959). The Trust standardized the production of movies through assembly-line formulas and by capping the length of movies at one reel. This standardization stabilized the collaboration of the industry players at low production costs and was explained by the alleged belief that "the mass audience was ... weak-minded and unable to withstand the mental strain of watching a film that lasted longer than 10 minutes" (Stones, 1993, p. 27). In other words, during the nickelodeon era movies were commodified in a manner that could justify uniform pricing.

In 1912, feature films were introduced in the United States. Feature films were highly differentiated in length, style, and content and were priced accordingly. This development spelled the end of the nickelodeon business model and was facilitated by patent and antitrust actions against the Trust. For a short period, free market forces governed the industry. Movie pricing was a function of the length of the movie, participating stars, the director, release time, and general popularity (Bowser, 1990, 191–215; Cassady, 1959, 374–86).

3.2. The rein of the organized distributors

Between 1915 and 1948, the industry underwent several waves of business expansion and contraction; some of the major industry players merged, and others dissolved. The consolidation and expansion trends originated in pursuit of efficiency gains but continued with the race by the vertically integrated players to accumulate market power through further consolidation and expansion. During most of this period, eight powerful national distributors (the "Organized Distributors") colluded and dominated the industry.[22] Five of these distributors integrated production, distribution, and exhibition (the "Majors");[23] two distributors integrated production and distribution;[24] and the eighth distributor primarily distributed independent films.[25] Perhaps the most peculiar characteristic of the movie theater industry during this era was the Majors' substantial ownership stakes in the vast majority of first-run theaters in large cities. This characteristic facilitated their control of admission prices. Beginning in the early 1920s, exhibitors were no longer free to set admission prices; rather, virtually all distribution contracts stipulated minimum prices that were sufficiently high to bind for most show times (Bertrand et al., 1941, pp. 41–49; Conant, 1960, pp. 69–70). The new pricing system integrated three principal marketing practices: intertemporal pricing, film grading, and block-booking.

Intertemporal pricing

Under the new system, theaters were classified according to their affiliation, luxuriousness, age, and location. Based on this classification, a "run-clearance-zone" system was established. In any defined geographic location ("zone"), a given movie played at one the-

[22] For a concise presentation of the players, see United States v. Paramount Pictures Inc., 70 F. Supp. 53, 55-60 (S.D.N.Y. 1946).

[23] These players evolved into Paramount, Loew's, Radio-Keith-Orpheum ("RKO"), Twentieth Century-Fox Film, and Warner Brother Pictures. *Id.* at 56–58.

[24] Columbia and Universal. *Id.* at 58–59.

[25] United Artists. *Id.* at 60.

ater ("run"), and another theater within the same zone could show the same movie only after a defined period lapsed ("clearance").[26]

Film grading

The Organized Distributors established differentiated production lines of movies and corresponding variable pricing regimes. Already before 1920, production lines of varying quality formed based on budget, leading actors' popularity, genre, and story quality. Films from these production lines were graded A, B, or C, and admission prices were set accordingly (Huettig, 1944, pp. 24–25; Taves, 1993).

Block booking

Block booking involves licensing motion pictures as a package, without allowing the exhibitor to select specific movies in the package. Block booking was often combined with blind selling, a practice whereby a distributor licenses a movie before the exhibitor has an opportunity to view it (see *infra* Section 3.4). Since its invention in 1917, the practice of block booking has been, and still is, an endless source for litigation and academic debate.[27] For the purpose of this paper, the interesting characteristic of block booking during the era of the Organized Distributors is that, although exhibitors paid one price for a bundle of movies, admission prices per movie varied across movies even for premieres. In contrast, today distributors license and price films on a movie-by-movie basis. Nevertheless, exhibitors charge one price for all movies.

During the era of the Organized Distributors, exhibitors enhanced the price differentiation schemes administered by the Organized Distributors to increase profitability (Orbach, 2004, pp. 336–41). The primary practice was charging admission fees higher than the required minimums on weekends and during holidays, when the demand for watching movies was relatively inelastic. Many exhibitors also offered indirect discounts in order to sell tickets below the stipulated minimum admission prices. Some examples of such discounts were double features, giveaways, free ladies' nights, and prizes. Probabilistic indirect discounts (lotteries) in various forms, including a chance to win a basket of groceries, became particularly common when the Great Depression hit the movie theater industry in 1931 and permitted price cuts were insufficient to attract audiences.

3.3. The paramount case

The era of the Organized Distributors enriched the antitrust case law with an unprecedented number of decisions. This was hardly surprising since the administration of the pricing system by the Organized Distributors was illegal, given the general prohibition

[26] Bertrand et al. (1941), pp. 40–45; Huettig (1945), pp. 125–31. This system gave rise to several antitrust actions. *See, e.g. Interstate Circuit v. United States*, 306 U.S. 208 (1939).

[27] *See*, *e.g.* United States v. Loew's, Inc., 371 U.S. 38 (1962); *Paramount*, 334 U.S. at 156–59; *In re* Famous Players-Lasky Corp., 11 F.T.C. 187 (1927); United States v. Twentieth Century Fox Film Corp., 882 F.2d 656 (2d Cir. 1989); FTC v. Paramount Famous-Lasky Corp., 57 F.2d 152 (2d Cir. 1932). *See also* De Vany and Eckert (1991), Hanssen (2000), Kenney and Klein (1983), Kenney and Klein (2000), Stigler (1963).

against resale price maintenance.[28] Although the government and private plaintiffs won many cases before *Paramount*, they had only a small impact on the industry. The *Paramount* case, however, would change the face of the industry forever.

The government filed its original complaint against the Organized Distributors in July 1938 and handled the case for 14 years, through four proceedings (two trials in the Southern District of New York, an appeal to the Supreme Court, and a remand to the Southern District), and several decrees and consent decrees. By the end of the *Paramount* litigation, three new legal rules governed the industry: (i) no direct or indirect intervention in box-office pricing by producers and distributors; (ii) no licensing negotiations except on theater-by-theater and movie-by-movie bases; and (iii) no vertical integration between the *Paramount* defendants and exhibitors. The courts intended these rules to open the market to independent producers and distributors, to allow exhibitors to select which movies they would show, and to remove artificial constraints on ticket pricing.

Theaters in the post-*Paramount* era did not lose their limited monopolistic power in their local territories, since the *Paramount* decrees did not prohibit the organization of film licensing through run-clearance-zone systems. This feature of the decrees still allows theaters to charge premiums for popular movies. Furthermore, the prohibition on block booking and the duty to negotiate licensing on a movie-by-movie basis added to the exhibitors' pricing calculus the exact cost of each movie. Almost 60 years after *Paramount*, however, many exhibitors maintain loyalty to specific distributors and *de facto* product splitting[29] still plays an important role in the negotiations between distributors and exhibitors. Most importantly, distributors have continued to intervene at least indirectly in ticket pricing.

3.4. *The prohibition against blind bidding*

Blind bidding is the practice whereby a distributor requires exhibitors to bid on the licensing of a motion picture without first having an opportunity to view the film. Blind bidding may serve various purposes, including block booking and advance distribution planning. The *Paramount* trial court examined the practice and held that "[b]lind-selling does not appear to be as inherently restrictive of competition as block-booking, although it is capable of some abuse."[30] Accordingly, the trial court allowed the practice, subject to exhibitors' right to reject "a certain percentage of their blind-licensed pictures."[31] The decrees issued by the district court set this percentage at 20% and the Supreme Court upheld the decrees without discussion.[32] Blind-bidding was not a concern of the *Paramount* Court

[28] Dr. Miles Med. Co. v. John D. Park & Sons Co., 220 U.S. 373 (1911). In 1937, Congress responded to the per se rule by giving the states the right to authorize resale price maintenance for sales within their borders. Miller-Tydings Act of 1937, 50 Stat. 693 (1937). Forty years later, Congress changed its mind, and the authorization was withdrawn by the Consumer Goods Pricing Act of 1975, 89 Stat. 101 (1975).

[29] Product splitting is a practice whereby several theaters in a territory tacitly or explicitly agree not to bid aggressively against each other for certain films. Each theater in the territory has the opportunity, on a rotating basis, to obtain major new films for relatively low rental terms.

[30] United States v. Paramount Pictures, Inc., 66 F. Supp. 323, 350 (S.D.N.Y. 1946).

[31] *Id*.

[32] *Paramount*, 334 U.S. at 157.

primarily because it was employed irregularly and was perceived less harmful than other practices. In the post-*Paramount* era, however, distributors sought to enforce blind-bidding much more frequently and the practice drew the attention of the Justice Department. In 1968, the Justice Department entered into consent decrees with the *Paramount* defendants to limit to three the number of films which they could blind bid per year.[33] The decrees expired in 1975 and within a few years 24 states enacted anti-blind bidding statutes that are commonly referred to as "Motion Picture Fair Competition Acts."[34]

The anti-blind bidding statutes typically prohibit any form of blind bidding[35] and establish bidding procedures that attempt to provide equal opportunities to all exhibitors. Ten state statutes provide that the legislative stated purpose is "establish[ing] fair and open procedures for [film bidding and negotiation] in order to prevent unfair and deceptive acts or practices and unreasonable restraints of trade."[36] In some states, the stated legislative intent is broader and also lists the goals of "holding down admission prices," "preventing exposure of the public to objectionable or unsuitable motion pictures," and "expanding the choice of motion pictures available to the public."[37] Under most statutes, an exhibitor's waiver of its right to watch films prior to bidding is void and unenforceable.[38] Finally, four states outlaw minimum fee guarantees for distributors and advance payments as securities[39] and one state bans per-capita requirements.[40] The practice of blind bidding is as controversial as block booking, although less studied. Distributors have failed in attacking the constitutionality of anti-blind bidding

[33] United States v. Paramount Pictures, Civil Action 87-273 (S.D.N.Y. 1968).

[34] These states are: Alabama (Ala. Code § 8-18-1 et seq.); Arkansas (Ark. Code Ann. § 4-75-901 et seq.); Georgia (Ga. Code Ann. § 10-1-291 et seq.); Idaho (Idaho Code § 18-7701 et seq.); Indiana (Ind. Code Ann. § 24-1-5-1 et seq.); Kansas (Kan. Stat. Ann. § 51-101 et seq.); Kentucky (Ky. Rev. Stat. § 365.750 et seq.); Louisiana (La. Rev. Stat. § 37.2901 et seq.); Maine (Me. Rev. Stat. tit. 10 § 1901 et seq.); Massachusetts (Mass. Gen. Laws ch. 93F, § 1 et seq.); Missouri (Mo. Ann. Stat. § 407.350 et seq.); Montana (Mont. Code Ann. § 30-14-301 et seq.); New Mexico (N.M. Stat. Ann. § 57-5A-1 et seq.); North Carolina (N.C.Gen. Stat. § 75C-1 et seq.); Ohio (Ohio Rev. Code. Ann. § 133.05 et seq.); Oregon (Or. Rev. Stat. § 646.868); Pennsylvania (Pa. Stat. Ann. tit. 73, § 203-01 et seq.); South Carolina (S.C. Code Ann. § 39-5-510 et seq.); Tennessee (Tenn. Code Ann. § 47-25-701 et seq.); Utah (Utah Code Ann. § 13-13-1 et seq.); Virginia (Va. Code Ann. § 59.1-255 et seq.); Washington (Wash. Rev. Code.Ann. § 19.58.010 et seq.); West Virginia (W. Va. Code § 47-11D-1 et seq.); and Wisconsin (Wis. Stat. Ann. § 134.23).

[35] Missouri allows the blind bidding of two films a year. Mo. Ann. Stat. § 407.353.

[36] Ala. Code § 8-18-1; Ark. Code Ann. § 4-75-901; Ga. Code Ann. § 10-1-291; Mont. Code Ann. § 30-14-302; N.M. Stat. Ann. § 57-5A-1; N.C.Gen. Stat. § 75C-1; Pa. Stat. Ann. tit. 73, § 203-02; Va. Code Ann. § 59.1-256; Wash. Rev. Code.Ann. § 19.58.010; W. Va. Code § 47-11D-1.

[37] Ark. Code Ann. § 4-75-901; Mont. Code Ann. § 30-14-302; N.M. Stat. Ann. § 57-5A-1; N.C.Gen. Stat. § 75C-1. The Pennsylvania statute provides legislative findings of various potential social costs associated with blind bidding. Pa. Stat. Ann. tit. 73, § 203-02; W. Va. Code § 47-11D-1.

[38] Ala. Code § 8-18-4; Ark. Code Ann. § 4-75-905; Ga. Code Ann. § 10-1-294; Idaho Code § 18-7707; Ind. Code Ann. § 24-1-5-2; Ky. Rev. Stat. § 365.755(4); La. Rev. Stat. § 37.2903(3); Me. Rev. Stat. tit. 10 § 1902(4); Mass. Gen. Laws ch. 93F, § 2; Mo. Ann. Stat. § 407.357; Mont. Code Ann. § 30-14-307; N.M. Stat. Ann. § 57-5A-4(E); N.C.Gen. Stat. § 75C-3(e); Ohio Rev. Code. Ann. § 133.06(d); S.C. Code Ann. § 39-5-540; Tenn. Code Ann. § 47-25-703; Va. Code Ann. § 59.1-258(C); Wash. Rev. Code.Ann. § 19.58.030(4).

[39] Idaho Code § 18-7704, 7706; Pa. Stat. Ann. tit. 73, § 203-05, 06; Utah Code Ann. § 13-13-1; Wis. Stat. Ann. § 134.23(4).

[40] Utah Code Ann. § 13-13-1.

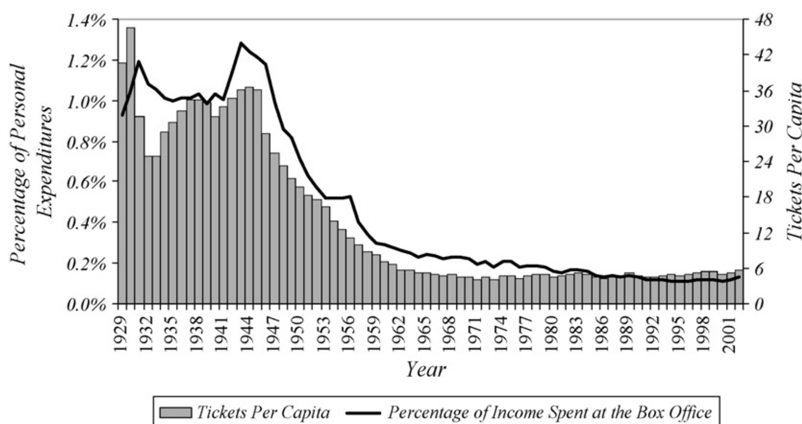

Fig. 4. Spending at the box office (1929–2002). *Source*: Orbach (2004).

statutes,[41] but prevailed in defending the practice in states that had not adopted such statutes.[42]

The prohibitions on blind bidding could presumably assists in facilitating variable pricing, since they provide exhibitors with information on coming movies at the time of designing box-office pricing. Notwithstanding, these prohibitions and, specifically the mandatory bidding procedures, resonate the old *Paramount* preference for "competitive bidding" for films and away from sustainable relations between distributors and exhibitors.

3.5. The convergence to uniform pricing

During the late 1940s, the movie theater industry entered a deep recession, primarily because of the post-World War II economic contraction (1946–1948), dramatic changes in Americans' consumption of leisure activities, and the advent of television. The decline in the movie-exhibition business began in 1946 and continued uninterrupted until the 1970s, with the rate of decline diminishing over this time period. In dollar amounts, annual box office revenues fell from a peak of $1.7 billion in 1946 to $942 million in 1962. Adjusted to 2002 dollars, the box office receipts, which hit a record of $15.6 billion dollars in 1946, bottomed out at just $5.5 billion in 1964, and then gradually climbed to $9.5 billion in 2002. The adjusted figures of per capita spending are even more dramatic. Annual per capita spending at the box office dropped from $110 in 1946 to $29 in 1963 and since then has never passed the $33 mark. The percentage of personal expenditures spent at the box office reached a peak of 1.28% in 1943 and then steadily declined until the 1990s, when it stabilized at a level of 0.11–0.13% (Fig. 4). The latter figures are not adjusted for changes in income or controlled for substitutes for movies. Nevertheless, the drastic decline sheds some light on the trends at the box office.

[41] *See*, *e.g.* Allied Artists Picture Corp. v. Rhodes, 679 F.2d 656 (6th Cir. 1982); Paramount Pictures Corp. v. Busbee, 250 Ga. 252 (Ga. 1982); Associated Film Distrib. Corp. v. Thornburgh, 614 F. Supp. 1100 (E.D. Pa. 1985).

[42] *See*, *e.g.* Harkins Amusement Enterprises, Inc. v. General Cinema Corp., 850 F.2d 477 (9th Cir. 1988).

As predicted by standard economic models, the major studios responded to the decline in demand by reducing the supply of movies. Additionally, the nature of the supply changed. Significantly fewer B and C movies were produced. The immediate price response to changes in the industry was a significant increase in the average admission price. This upward trend in admission prices continued almost unabated until the 1970s, with the exception of a sharp price decline in 1954 (see Fig. 3). The price decline of 1954 is explained by the cut in the federal admission tax and a change in the ratio of newly released to re-issued movies. The general upward trend in admission prices is due to the contraction of the market for low-price B and C movies, the collapse of the uniform run-clearance-zone system, and the relatively inelastic demand of audiences that continued to patronize the theaters. The combination of these factors allowed theaters to select attractive movies, to show early runs, and to raise prices.

The industry's gravitation toward A movies during the post-Paramount era necessarily caused less price dispersion because the product was less differentiated. Nevertheless, throughout the 1950s and 1960s there was a clear distinction between pricing of regular and event movies. Exhibitors also maintained price variation between weekdays and weekends and among different types of seats. Furthermore, in an attempt to attract price-sensitive patrons, exhibitors devised student and senior discounts that, while tried before the 1950s, had never been consistently employed.

Although much of the price differentiation during the 1950s and 1960s was voluntary on the part of exhibitors, there were many complaints regarding the direct and indirect intervention of distributors in the setting of admission prices. Conduct related to the maintenance of a uniform run-clearance-zone system was not easy to prove, although some uniformity persisted. Despite many reported complaints, enforcement of the prohibition against intervention of distributors in setting admission prices was particularly difficult. Prior minimum admission price requirements became mere suggestions, whose "cheap-talk" nature prevented prosecution although their repetition had a self-enforcing power. Suggested admission prices took the form of recommendations during licensing negotiations as well as more binding forms, such as raising shares of box office revenues, instituting per-capita requirements for exhibitors, and punishing exhibitors who charged low admission prices. A conservative conclusion from the existing evidence is that, until the 1970s, the distributors remained active in the determination of admission prices in violation of the *Paramount* decrees and general antitrust law. As Robert Crandall notes in a study of the industry during the 1950s and 1960s: "For all intents and purposes, the old cartel remained, stripped of its theaters and formal channels of communication" (Crandall, 1975, p. 57).

Uniform prices in their present form first appeared in the early 1970s. The first event movie that opened nationwide at regular admission prices was *The Godfather* in 1972. It is implausible that all exhibitors across the country decided individually to charge a regular price for *The Godfather*. Therefore, it seems reasonable to infer that Paramount, the producer–distributor of the movie, was at least somewhat involved in this pricing transition. Such intervention, if it occurred, was in violation of the *Paramount* decrees. *The Godfather*, however, set a new norm for event movies.

Price variation across seats apparently disappeared in light of theaters' excess capacity, which made it too costly to monitor patrons in the auditorium. The emergence of one price for all movies roughly paralleled the appearance of multiplexes, and, at least theoretically,

this historical correspondence may indicate causality. At the multiplex, the costs of administering variable pricing across movies could arguably make such a scheme unprofitable (*see infra* Section 4.2). Yet, as already noted, this explanation cannot account for price uniformity across days and seasons. Moreover, in the mid 1970s, when price differentiation across movies largely disappeared, there were still no multiplexes in most towns, the vast majority of theaters in the country had a single screen, and existing multiplexes had very few screens.[43] Therefore, the appearance of multiplexes does not seem to explain the emergence of one price for all movies.

Today, more than 50 years after the *Paramount* decrees were issued, most theater chains are informally affiliated with specific major distributors in the sense that they license movies primarily from these distributors. This market pattern illustrates one of the failures of the *Paramount* decrees to facilitate a competitive bidding market in which theaters have access to all distributors and in which there are no vertical affiliations of distributors and theaters. News reports suggest that producers and distributors object to deviation from uniform pricing and often prevent deviation from the present pricing regime.[44] Such intervention, although never challenged, is illegal under the *Paramount* decrees that are still in force. The scattered anecdotal evidence may indicate that producers and distributors sometimes act to discourage deviation from the present pricing regime, but it does not indicate whether they acted consciously together or unilaterally to bring about the uniform pricing regime.

4. Possible causes for uniform prices

Our inquiry into the possible causes for uniform admission fees at the movie theater is based on many interviews and conversations with industry practitioners and observers. Most of the popular explanations utilize soft arguments from behavioral economics and transaction-cost economics. Some explanations, although frequently used to explain the general practice of uniform pricing, apply only to the movie puzzle and, cannot explain the show-time puzzle. However, even less-persuasive arguments may still sustain the persistence of the uniform pricing regime, as they are added to more established reasons. The more established reasons relate to structural characteristics of the motion-picture industry and, specifically, the nature of the relationships between distributors and exhibitors and the legal constraints that are imposed on them. Thus, although some of the popular explanations may be refuted, the combination of well-established and less-established explanations seems to contribute to the persistence of the present pricing regime.

[43] In 1979, there were 9021 indoor theaters in the United States with 13,331 screens or 1.48 screens per indoor theater. The leading builder of multiplexes in the 1970s, General Cinema Corp., had 203 theaters with 256 screens (1.26 screens per theater) in 1970, and 337 theaters with 843 screens (2.5 screens per theater) in 1979. See Conant (1981), p. 98.

[44] *See*, *e.g.* Jill Goldsmith, “AMC Tempts Auds with Multi-Pic Card,” *Daily Variety*, June 11, 2001, p. 28 (describing a discount program of a major theater circuit and quoting the distribution chief of DreamWorks saying that they could not tell exhibitors what to charge but could include per-capita requirements in the rental contracts); Andrew Hindes, “Multiplex Showdown in Desert,” *Variety*, March 24, 1997, p. 9 (“In the event that one or both [of the competing] exhibitors decides to slash admission prices, distrib[utors] have the option of selling pictures on a ‘per capita’ basis, collecting a fixed amount per patron.”).

4.1. Behavioral explanations

4.1.1. Perceived fairness

Businessmen often believe that price changes that consumers perceive as unfair are undesirable (Blinder, Canetti, Lebow, & Rudd, 1998). For example, Coca-Cola took fire for introducing a vending machine that adjusted prices to weather conditions (Hays, 1999; McKay, 1999). Economists who have studied this intuition argue that it deters businesses from taking full advantage of the law of supply and demand.[45] In the context of entertainment industries, Okun (1981, p. 170) notes:

> [I]mplicit contracts or conventions . . . introduce a concept of fairness in the relations between suppliers and customers whereby price increases based on cost increases are generally accepted as fair, but many that might be based on demand increases are ruled out as unfair. That analysis leaves many specific questions unanswered. Some forms of peak-load pricing by utilities or transport are accepted (even by regulators) as fair; some hotels in college towns charge especially high rates on football weekends. On the other hand, firms in the sports and entertainment industries offer their customers tickets at standard prices for events that clearly generate excess demand.

The standard analysis of perceived fair prices focuses on a reference transaction (Kahneman, Knetsch, & Thaler, 1986a), which in the motion-picture industry is the purchase of a movie ticket. Presently, moviegoers are accustomed to uniform admission prices, and this transactional experience may create the implicit assumption that exhibitors' costs do not vary across movies. Accordingly, modifying admission prices uniformly in accordance with changes in general costs may be more acceptable than setting different prices for different movies and different show times. For example, charging higher prices on weekends and holidays may antagonize patrons because they would perceive it as an act to increase exhibitors' profits in an unfair fashion.

Despite the difficulties that fairness perceptions may present, they cannot justify uniform admission prices. Uniform prices seem fair because of the system's regularity, not because of any intrinsic justice.[46] No sophisticated schemes and ploys are needed to change the present reference transaction; in fact, simple marketing mechanisms could do the trick. The starting point is the distinction between the movie and the show-time puzzles. All consumers are familiar with the concept of different prices for different products, although for some consumers charging different prices for products they consume at different points of time may appear unfair at first. Thus, charging premiums or giving discounts for unique categories of movies is unlikely to be perceived as unfair. For example, given the unique characteristics and highly publicized production budgets of event movies, charging premiums for such

[45] See, e.g. Akerlof (1982), Kahneman et al. (1986a), Kahneman, Knetsch, and Thaler (1986b), Rabin (1993), Franciosi, Deng, Kujal, Michelitsch, and Smith (1995), and Rotemberg (2005).

[46] Kahneman et al. (1986a) point out that "[p]sychological studies of adaptation suggest that any stable state of affairs tends to become accepted eventually, at least in the sense that alternatives to it no longer readily come to mind." In the same spirit, Franciosi et al. (1995) conducted several experiments and showed that, although a transition path to a new equilibrium may be affected by fairness considerations, equilibrium outcomes reflect standard economic models.

movies probably would not violate fairness perceptions. Indeed, past experience and international markets provide good reasons to believe that patrons would not perceive such a practice as unfair. It also seems unlikely that discounts for films whose demand is relatively elastic, such as documentaries, would be perceived as unfair.[47]

As to fairness perceptions and the show-time puzzle, the industry could utilize simple framing schemes to re-accustom the public to different prices for different show times. The general rule is that consumers may be hostile toward price increases but always welcome discounts (Kahneman, Knetsch, & Thaler, 1991; Thaler, 1980). Therefore, discounts on weekdays and during low-demand seasons could establish a non-uniform pricing system without antagonizing patrons. Once such a pricing regime is established, price modifications for specific show times are unlikely to violate fairness perceptions since the structure of the reference transaction has lost its uniformity. The perceptive asymmetry between discounts and surcharges is important: For many individuals it is easier to forgo discounts than accept surcharges. Thus, although charging "summer surcharges" and canceling "winter discounts" are economically equivalent, the latter is likely to be more acceptable. More generally, a successful transition to variable pricing could be facilitated through simple framing strategies.[48] Moviegoers are familiar with peak-load pricing systems in many industries, used to be accustomed to such pricing in the movie-theater industry, and probably could be re-accustomed.

4.1.2. Unstable demand

Another common explanation for uniform prices is that, under variable pricing, moviegoers would perceive the price as a quality signal. According to this view, price differentiation would deter patrons from low-priced movies. In economic terms, the fear is that the demand for movies is unstable (Becker, 1991) and that any price drop below the uniform price would lead to a sharp decrease in demand. This explanation, of course, addresses only the movie puzzle and has no explanatory power for the show-time puzzle.

The question of whether ticket prices are perceived by moviegoers as quality signals and will therefore affect demand is an empirical one and has never been tested. Still, even if demand were unstable, some price variation would probably still be profitable. First, adjusting admission prices to the recurring demand patterns over time conveys no quality signals. Second, charging higher prices for event movies is unlikely to have any negative effect on the demand for other movies—patrons clearly distinguish between "regular" and "event" movies. Similarly, different admission prices for movies that target different audiences are unlikely to destabilize the demand for less pricey movies. For example, lowering prices for documentaries may increase the demand rather than shrink it. Thus, the unstable-demand argument applies only to price differentiation across movies with a similar profile. In such circumstances, however, price differentiation is less justified on economic grounds as well.

[47] The recent smooth transition of the New York Mets towards charging different prices for different visiting teams (Asker & Cabral, 2005) supports this conjecture.

[48] See generally Harris and Joyce (1980). Several studies show that consumers are susceptible to explanations regarding the rationale for pricing and alter their fairness perceptions following such explanations (see, e.g. Ng, 1988).

4.1.3. Demand uncertainty

Demand uncertainty is the most studied characteristic of the motion-picture industry (Caves, 2000; De Vany, 2004; Goldman, 1984) and perhaps the most mentioned explanation for uniform pricing, although it applies only to the movie puzzle. Demand uncertainty arguably prevents pricing individual movies prior to their release because their prospective appeal is unknown. After the release, the ability to adjust prices is limited: price cuts are likely to be perceived as quality signals and may deter patrons rather than increase demand, and price increases may antagonize patrons and have a chilling effect.

The demand uncertainty argument is too broad and, despite its popularity, cannot explain the uniform-pricing puzzle. First and foremost, the argument fails to explain the show-time puzzle. Uncertainty regarding the performance of newly released movies has nothing to do with possible differentiation across seasons or price differentiation between weekdays and weekends. Second, empirical evidence shows that demand uncertainty is not as great as popularly argued and that the determinants of success in the industry are not totally random (see Section 2.2.1 and Moul, 2004). Producers may be unable to predict the demand for specific movies, but can identify with some level of confidence certain categories of movies with unique demand characteristics, such as event movies and documentaries. In fact, studios make significant investments in studying consumers' preferences to improve their ability to forecast box-office revenues (Bakker, 2003). Empirical evidence suggests that production budgets, sequels, participation of stars and top directors, ratings, competition from other movies, and advertising are all significantly related to revenues and thus can be incorporated into pricing decisions.[49]

To summarize this point, despite the demand uncertainty in the motion-picture industry and the unique characteristics of the products that inhibit price adjustments, uncertainty cannot explain a broad uniform pricing regime and, specifically, price uniformity across show times and seasons.

4.2. Menu and monitoring costs

Administering variable pricing could be costly. For example, variable pricing could result in complex price menus that would confuse moviegoers and deter moviegoing. Similarly, differentiating among movies would require monitoring mechanisms to prevent patrons from purchasing tickets for low-price movies and watching premium-price movies. We do not dismiss the potential significance of menu and monitoring costs. Our argument is that such costs do not exclude the possibility of devising and policing profitable variable pricing regimes.

The relations between variable pricing and menu costs may impose constraints on the complexity of the pricing structure but they do not bar variable pricing. In the past, American moviegoers were sophisticated enough to handle non-uniform admission fees

[49] See, for example, Austin (1989), Litman and Kohl (1989), Wallace et al. (1993), Eliashberg and Shugan (1997), Litman and Ahn (1998, p. 172–197), and Ravid (1999). Similarly, several studies show that nominations for Academy Awards contribute to a film's revenues (Dodds & Holbrook, 1989; Smith & Smith, 1986; and Nelson, Donihue, Waldman, & Wheaton, 2001). Because of the short screen life of movies, the Oscar effects are relevant only to a small group of movies.

and there is no reason to believe that today's moviegoers are any less sophisticated. A different price for any movie and for any show time may deter moviegoers from the theaters, but the costs of administering weekend pricing and premiums for event movies are likely to be insignificant for exhibitors and moviegoers. In other words, some degree of price differentiation is unlikely to generate menu costs that would deter moviegoers from the theater.

Under variable pricing, monitoring costs are a product of the need to limit arbitrage opportunities at the multiplex: the need to prevent moviegoers who buy low-price tickets from watching high-price movies. This concern applies mostly to price differentiation across movies and not so much to price differentiation across show times. In practice, exhibitors already employ mechanisms that could mitigate much of the arbitrage opportunities. Today, some screens are sold out while others are not, and, therefore, exhibitors must monitor the patrons entering sold-out movies. Otherwise, patrons who could not purchase a ticket to a sold-out movie could use a ticket to another movie. Similarly, exhibitors must prevent moviegoers who buy matinee tickets from watching evening shows and, at the multiplex, they must prevent moviegoers from watching two movies in a row for the price of one movie. One indication of the possibility to administer variable pricing with reasonable monitoring costs is the prevalence of price discrimination across seats in some countries (Cheung, 1977) and at some theaters in the United States, as well as the prevalence of reserved seating in many international markets. Put simply, the arbitrage opportunities under a variable-pricing regime are similar to those that already exist today and, therefore, cannot explain a firm uniform pricing regime.

4.3. Structural characteristics of the industry and regulatory constraints

4.3.1. Agency problem

At the box office, the interests of exhibitors and distributors may diverge, even though they share revenues. For the exhibitor, a dollar spent by a patron on refreshments is better than a dollar spent on a ticket, as the markup on refreshments is approximately 85% and on tickets approximately 45%. As a result, the exhibitor's interest is not necessarily to maximize box office revenues (Hofmann, 2003). Uniform pricing, together with the customary per-capita requirements, *arguably* allow distributors to maintain minimum levels of ticket prices, thereby protecting their share in the box-office receipts. In reality, however, the per-capita requirements rarely bind. Moreover, this agency-problem argument explains neither the show-time puzzle nor the movie puzzle. Even from the exhibitors' perspective, it seems desirable to charge higher prices for event movies and movies on weekends and holidays where the demand is relatively inelastic.

Another agency problem at the box office is related to the distributors' concerns that, under variable pricing, exhibitors would attribute moviegoers of high-price movies to low-price movies and pocket the price difference rather than sharing it with the distributors. Under uniform pricing, however, similar temptations arise, as the distributor's share varies significantly across movies that are in different points of their runs. Moreover, this agency-problem argument raises the question of why should exhibitors bother to engage in such accounting manipulations, while they can simply misstate the number of patrons and pocket a much larger share of the box-office receipts.

Agency problems of similar nature – actual or imaginary – exist in other industries, but it is difficult to find an industry that adopts uniform pricing to address such problems. Most importantly, agency problems may arguably support price uniformity along the movie dimension, but they cannot explain the price uniformity along the show-time dimension.

4.3.2. Double marginalization

The regulatory separation between distributors and exhibitors in the motion-picture industry could potentially lead to double-marginalization problems in many geographic markets.[50] This could happen because distributors possess some market power in their films and exhibitors possess some market power in their geographic areas. The traditional solution to double marginalization problems is vertical arrangements between upstream and downstream players. This solution, however, is illegal under the *Paramount* decrees that still prohibit relational agreements between distributors and exhibitors[51] and spot contracts that specify exhibitors' pricing.

Uniform pricing mitigates the problem of double marginalization because, under such a pricing regime, exhibitors cannot adjust their markup to the demand for specific movies and specific show times. Therefore, the price only partially reflects their market power. This mechanism, however, is very rudimentary because it forestalls the incorporation of the demand characteristics into the price to the consumer. More specifically, uniform pricing prevents exhibitors from incorporating specific movie and show time demand characteristics into ticket pricing, while the distributors' share of box office receipts incorporates specific movie demand and frequently also seasonal demand. If vertical arrangements were allowed in the motion-picture industry, distributors and exhibitors could negotiate over admission prices and avoid double-marginalization problems. Under *Paramount*, this solution is still illegal in the motion-picture industry.

5. Conclusion

In the motion-picture industry, ticket prices do not vary with known and identifiable patterns of demand. Due to the persistence of the practice of uniform pricing at the box office, it is impossible to estimate demand elasticities for movies. The suggestive evidence, however, indicates that optimal pricing would not be uniform.

A unique characteristic of the motion-picture industry is the legal constraints on the relationships between distributors and retailers (exhibitors). The *Paramount* decrees significantly restrict the form and substance of the negotiations and contracts between distributors and exhibitors and attempt to facilitate competitive bidding markets for films. Among other constraints, the *Paramount* decrees prohibit any involvement of distributors in box-office pricing, restricting the design of pricing mechanisms that could align the interests along the supply chain.

[50] For a general theoretical analysis of the problem, see Spengler (1950) and Mathewson and Winter (1984).

[51] Since the 1980s, several distributors have been allowed to acquire theaters, but the prohibitions against distributors' intervention in box-office pricing have remained intact.

We could not find any good reason for the general, "across-the-board" practice of uniform pricing, although there exist sound justifications for price uniformity across most movies, but not all. The practice seems to persist partially due to misconceptions of exhibitors and partially due to distributors' enforcement of uniform pricing. While distributors are not allowed to intervene in box-office pricing, occasionally they enforce uniform pricing by refusing to deal with exhibitors that wish to switch to variable pricing. Such refusal to deal may be legally questionable, but it is not in violation of the *Paramount* decrees and, to the best of our knowledge, has never been challenged by private parties or by the antitrust agencies. Presently, the distributors' interest in uniform pricing seems stronger than that of exhibitors because they could be more affected by demand uncertainty, moviegoers' unstable demand, and agency problems.[52] In addition, uniform pricing may serve as a second-best solution to double-marginalization problems. Under present law, the first-best solution is not available because of the legal constraints on vertical arrangements.

Our study recognizes various practical and conceptual impediments to the transition to variable pricing in the motion-picture industry, and we discuss many of them. From the practical perspective, however, this paper suggests that restrictions on vertical arrangements between distributors and retailers and attempts to shape such arrangements as spot contracts make it difficult for firms to engage in profitable price differentiation. Absent the present regulation that seeks to facilitate competitive bidding markets for films, distributors and exhibitors could possibly agree on variable pricing regime that would serve their mutual interests.

Our basic argument – that exhibitors could benefit from price differentiation across movies and show times – calls for a final comment. Many scholars and industry practitioners who have considered this argument dismissed it in its entirety. Much of the reluctance to adopt variable pricing stems from formidable concerns about the costs of administering and policing price differentiation across movies. Such differentiation may present a challenge to the industry, but it should neither be confused with, nor should it supersede, price differentiation across show times. Practical obstacles to variable pricing across movies, if such exist, cannot explain why movies are priced uniformly on weekdays and weekends and throughout the year. Thus, those who remain skeptic of the viability of price differentiation across movies, should still accept the view regarding the likely profitability and viability of non-uniform prices along the show-time dimension.

Last but not least, between the time of writing this paper and its publication, many exhibitors in the United States have experimented with various forms of variable pricing, mostly across show times. Quite a few exhibitors have revised their pricing practices to differentiate among show times and movies. These developments indeed suggest that even long-persisting practices, such as the uniform pricing at the movie theater, should be re-examined occasionally.

[52] See, e.g. a letter from United International Pictures, one of the six largest Hollywood distributors, to Mr. Stelios Haji-Ioannou, a pricing entrepreneur and the founder of easyCinema (Malkani, 2003): "We have concluded that your business model is unlikely to lead to a sustainable increase in aggregate rentals and on this basis that we should not begin a business relationship."

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