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THE CASE OF THE MOVIE-THEATER INDUSTRY

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Discussion Paper No. 337

10/2001

Harvard Law School  
Cambridge, MA 02138

The Center for Law, Economics, and Business is supported by  
a grant from the John M. Olin Foundation.

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# UNIFORM PRICES FOR DIFFERENTIATED GOODS: THE CASE OF THE MOVIE-THEATER INDUSTRY

Liran Einav\*

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## *Abstract*

In any given movie theater, all movies are priced the same regardless of their theatrical success and potential and regardless of the general demand conditions. This phenomenon is an extreme example of the practice of uniform pricing of differentiated goods, for which traditional economic theories provide no explanation. This paper studies the case of the pricing practices in the movie-theater industry that appear to be inferior in comparison to alternative pricing policies. We examine various possible causes for the practice that may shed light on the persistence of such inefficient pricing policies.

*JEL* class: D40, K21, L20, L82, M21, Z11

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# UNIFORM PRICES FOR DIFFERENTIATED GOODS: THE CASE OF THE MOVIE-THEATER INDUSTRY

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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.<sup>1</sup>*

## ***I. Introduction***

The law of supply and demand is probably the most known economic rule: prices of goods are determined by matching demand to supply so that markets are cleared. Throughout the years, many economists have dedicated themselves to the study of this law, its subtleties, and its exceptions, thereby contributing extensive writings on a wide variety of issues, such as monopolistic pricing, price discrimination, and price rigidities. Yet, a major exception to the law of supply and demand – *uniform prices for differentiated goods* – although ubiquitous has been largely neglected.

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<sup>1</sup> The CEO of Seagram, at the time the parent company of Universal Pictures. March 31, 1998, at the Annual conference of the motion-picture industry.

In the real world, the prices of many goods are uniform despite their heterogeneity. For example, at the theater in Harvard Square we paid the same for *Titanic*, the biggest hit ever, and for *The Postman*, a terrible box-office failure that nobody remembers anymore.<sup>2</sup> The U.S. Postal Service charges one price for sending a letter from coast to coast or within the same town. 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 also pay the same to see the Memphis Grizzlies and the Los Angeles Lakers when they come to town, even though the Lakers are always sold out and the Grizzlies would probably never be.

In many instances there are solid economic explanations for uniform pricing. Typically, transaction costs (such as information costs and menu costs), regulatory constraints, and other causes explain a big portion of the phenomenon. There are many other cases, however, in which the phenomenon seems unexplained. In this paper we focus on one such a case for which there seems to be no sound economic justification. This case is the long-lived practice of uniform prices at the movie theater, for which we argue that more profitable pricing policies can be easily devised.

This paper is organized as follows. Section II presents the puzzle of uniform prices at the movie-theater and briefly outlines the history of the practice. Section III provides an overview of the motion-picture industry with an emphasis on the movie-theater segment. Section IV presents the patterns of the demand for watching movies at the theater, and how

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<sup>2</sup> The production costs of *Titanic* were estimated at \$200,000,000 and its total box-office revenues were \$600,788,188. *The Postman*, which should not be confused with the successful Italian movie *Il Postino*,

these patterns may be incorporated into ticket-pricing policies. Section V addresses the concerns regarding the transition to differential pricing, and Section VI contains several concluding remarks.

## ***II. The Puzzle***

### ***A. Overview***

With a few insignificant exceptions, in any given movie theater tickets are priced uniformly, regardless of the movies' variable popularity, the day of the week, and the time of the year. The exceptions are typically related to matinees, students, senior citizens, and children. Additionally, many theater chains have various discount packages, which are aimed at institutions and large groups, and are not widely publicized. In short, admission prices at the movie theater hardly ever vary with respect to the demand for movies.

To be sure, price variations among theaters can be found in many cities. There are substantial differences in the admission prices at first- and second-run theaters and less considerable differences in the admission prices at theaters according to their location, design, physical condition, and other factors. In addition, theater chains assign different prices for different theaters within the chains.

These price variations have two important implications. First, they suggest that theater owners do invest time and resources in designing their pricing policies, albeit in limited

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collected at the box office \$17,626,234 and its production costs were estimated at \$80,000,000.

dimensions. Second, they constitute one hurdle, among others, to support a sustainable collusion between theater owners. Put simply, the price variations *across* theaters magnify the puzzle of uniform prices at the movie theater.

### ***B. Historical Perspective***

The movie-theater industry was born at the beginning of the twentieth century. Its incipency was in the nickelodeon theaters that were named after their early uniform admission price of five cents per movie, and kept the name when their prices were uniformly raised to ten cents per movie. At the time, movies were very short, had no sound, their plot was rather shallow, and they were sold to the exhibitors by their physical length (by foot). The nickelodeons, which sprung up across the country between 1905 and 1914, were usually converted dance halls, restaurants, or stores and did not aspire to offer the convenience and glamour that their succeeding palaces have offered [Merritt (1985)]. Indeed, under these conditions, the practice of uniform prices at the nickelodeons would make economic sense.

Technological changes, such as the emergence of the feature motion pictures and sound, brought about dramatic transformation of the industry and necessitated the building of designated theaters, which would fit the new technology. Admission prices went up, but the law of supply and demand, nevertheless, has never governed the industry. This was so even in times of excess demand. In 1932, for example, there was a hearing before a Senate Subcommittee regarding a proposed bill to prohibit the sale of movie tickets in excess of the number of seats available. Despite the constant excess demand for certain shows,

theater owners sold ‘options’ for seats in these shows, rather than simply raising the admission prices.<sup>3</sup>

Notwithstanding, during the first half of the twentieth century, there was a higher variation in admission prices than there is today. The huge palaces allowed theater owners to ask for different prices for different seats, it was common to offer two movies for one ticket, and many theaters showed movies of different runs for different prices. Differentiations across movies were also made by setting different number of runs for different movies, and offering special opening runs (“road shows”) for event movies [Conant (1960)]. Today, there is usually a clear distinction between first- and second-run theaters and we rarely observe theaters that exhibit ‘old’ and ‘new’ movies. Moreover, even in the theaters that do have a mixed repertoire of old and new movies, uniform pricing prevails.

Here we focus on the era beginning in the late 1960’s, in which most of the variation in admissions prices was no longer in place, and multiplexes took over the industry. At the multiplex, the practice of uniform prices is especially puzzling since the theater owner often faces situations in which tickets for some of her screens are sold out, whereas most of the seats in other screens are empty, and yet she still does not set different prices.

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<sup>3</sup> *Regulation of Motion-Picture Theater Tickets Sale*, Hearing before the Subcommittee of the Senate Committee on the District of Columbia, 72<sup>nd</sup> Cong., 2<sup>nd</sup> Sess. (Washington, D.C, 1932).

By the nature of things, we are not the first to identify the puzzle of uniform prices at the movie theater. Several industry practitioners, observers, and researchers have done so before us.<sup>4</sup> Most of them were rather decisive and argued that setting differential pricing by movie theaters “is too complex an undertaking that could cause confusion in the minds of consumers” [Litman (1998), at p. 45]. A few were less conclusive; Conant (1981), for example, noted that:

“[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.” (p. 103).

Yet, to the best of our knowledge, aside from occasional comments, the puzzle has not been studied, and this is what we set out to do in this paper.

### ***III. The Motion-Picture Industry***

#### ***A. Industry Structure and Practices***

The motion picture industry is comprised of three main players: producers, distributors, and exhibitors (movie theaters). Until the *Paramount* case (1948),<sup>5</sup> the major players vertically integrated production, distribution, and exhibition and allegedly leveraged this integration against independent competitors. The *Paramount* decrees forced the major

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<sup>4</sup> See, e.g., Paul Sweeting, *Imposing Real World on Pix Finds a Buyer*, VARIETY, Apr. 13, 1998, at 11; James Surowiecki, *What Price Hollywood*, THE NEW YORKER, Jan. 15, 2001, at 38. Geraldine Fabrikant, *Sale of DVD's are Challenging Movie Rental Business*, NEW YORK TIMES, Apr. 16, 2001.



players to sell the theaters they owned and some of them are still forbidden from full vertical integration with exhibitors.

The distribution of motion pictures is in large part regulated by federal and state antitrust laws and has been the subject of numerous antitrust cases that followed the *Paramount* case. Certain consent decrees, resulting from these cases, bind most of the major motion-picture distributors and require them to offer and license their motion pictures to exhibitors on a theater-by-theater and movie-by-movie basis. Most importantly, according to these decrees all pricing decisions must be made exclusively by the theaters.<sup>6</sup>

Motion pictures are licensed, rather than sold, to the exhibitors. The licensing is undertaken according to the film licensing zones that are established by the distributors. These zones are geographic areas, typically encompassing a radius of three to five miles, within which any given film is allocated to only one theater. In zones where a specific exhibitor faces no competition, she obtains licenses by selecting films from among those offered and negotiating the terms directly with the distributors. In competitive zones, the distributors usually allocate their films among the exhibitors in the zone, and less frequently require the exhibitors to bid for a film.

The contracts between exhibitors and distributors are based on revenue-sharing agreements, in which on average about half of the box office revenues are collected by the

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<sup>5</sup> *United States v. Paramount Pictures*, 334 U.S. 131 (1948).

<sup>6</sup> There is extensive literature on the competitive effects of the antitrust intervention in the motion picture industry. These studies do not address the effect on the box-office prices. *See, e.g.*, Conant (1960; 1981), Cassidy (1958), Cassidy and Cassidy (1964), Crandall (1975), Stigler (1963), Kenney and Klein (1983), Hanssen (2000).

theater. In this sharing scheme the exhibitor's share is lower early in the movie's screen life, and higher later on. In addition, several distributors have contracts with 'per-capita requirements' – a minimum amount the distributor gets for any ticket sold. As noted, the specific contractual terms may vary by theater and by movie, and generally the greater the box-office potential, the more favorable terms the distributor would be accorded. At the box office, however, these *ex-ante* estimations are not incorporated into the admission price; namely, although percentage-wise the exhibitors incur different costs for different movies and yet they do not passed on these differences to the moviegoers.

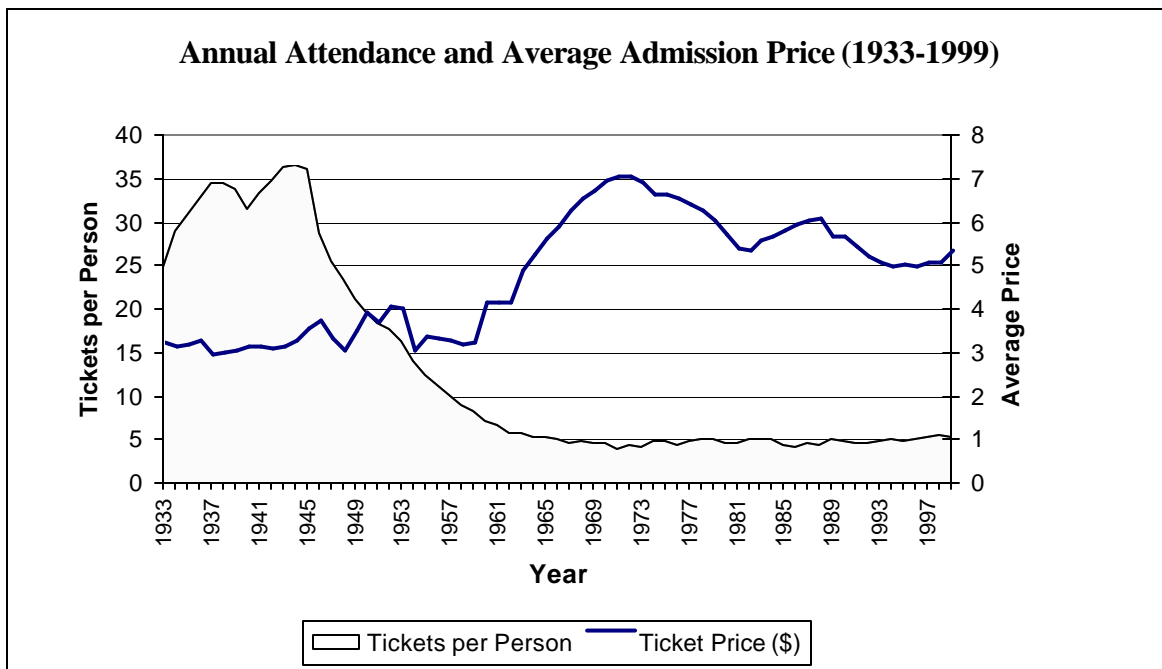
In light of the industry structure and practices, one may think that the long-term relationships between distributors and exhibitors may give distributors some influence over the exhibitors' pricing decisions despite the legal rules in this regard. Still, we argue, as elaborated in Subsection V.C below, that this contingency cannot explain the practice of uniform prices.

## B. Industry Developments

Even young moviegoers have witnessed in their lifetime dramatic changes in theaters. In this subsection we wish to present some of these changes that magnify the puzzle.

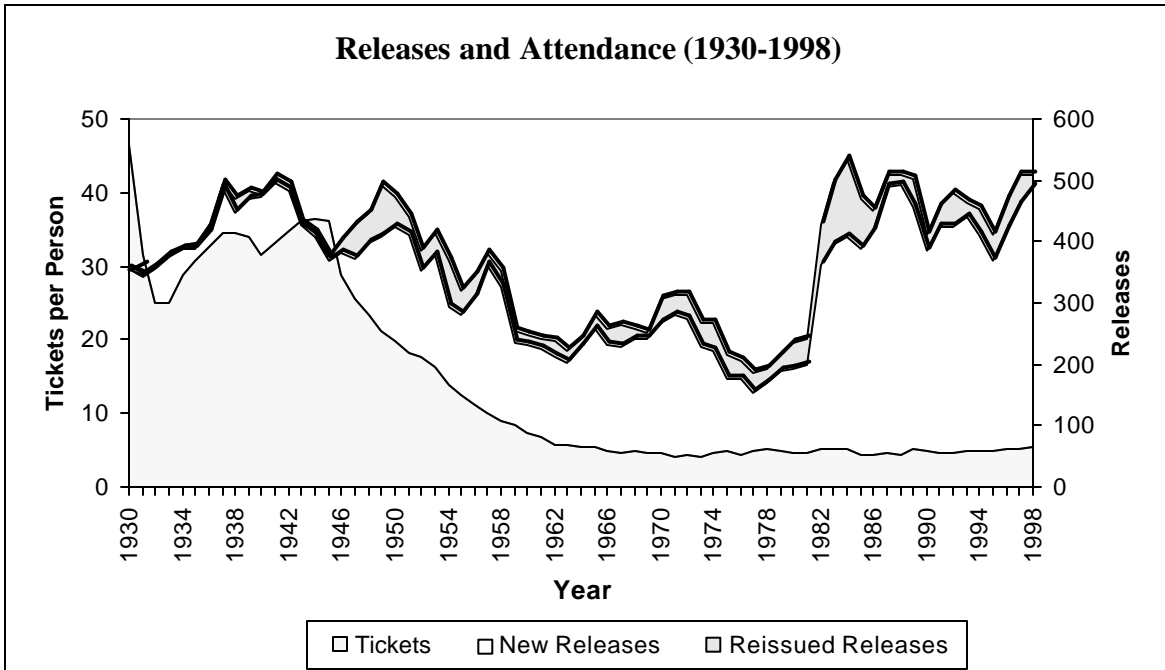
First, as shown in Figures 1 and 2,<sup>7</sup> in the past four decades movie attendance per capita has been stable despite significant fluctuations in the average price and annual number of releases. It follows that in this period the industry growth has essentially followed the population growth.

*Figure 1*



<sup>7</sup> The data for figures 1-4 was taken from THE ENCYCLOPEDIA OF EXHIBITION (2000-2001), THE MOTION PICTURE ALMANAC (1945, 2001), US Census Bureau.

Figure 2



\* Data on annual number of releases does not include releases by independent distributors prior to 1982. This is the reason for the discontinuity in the data between 1981 and 1982.

Second, in this period of stable personal consumption, exhibitors have competed in building fancy new theaters and renovating old ones, and consequently, as shown in Figures 3 and 4, the number of screens has soared, while the number of moviegoers per (smaller) screen has decreased.

Figure 3

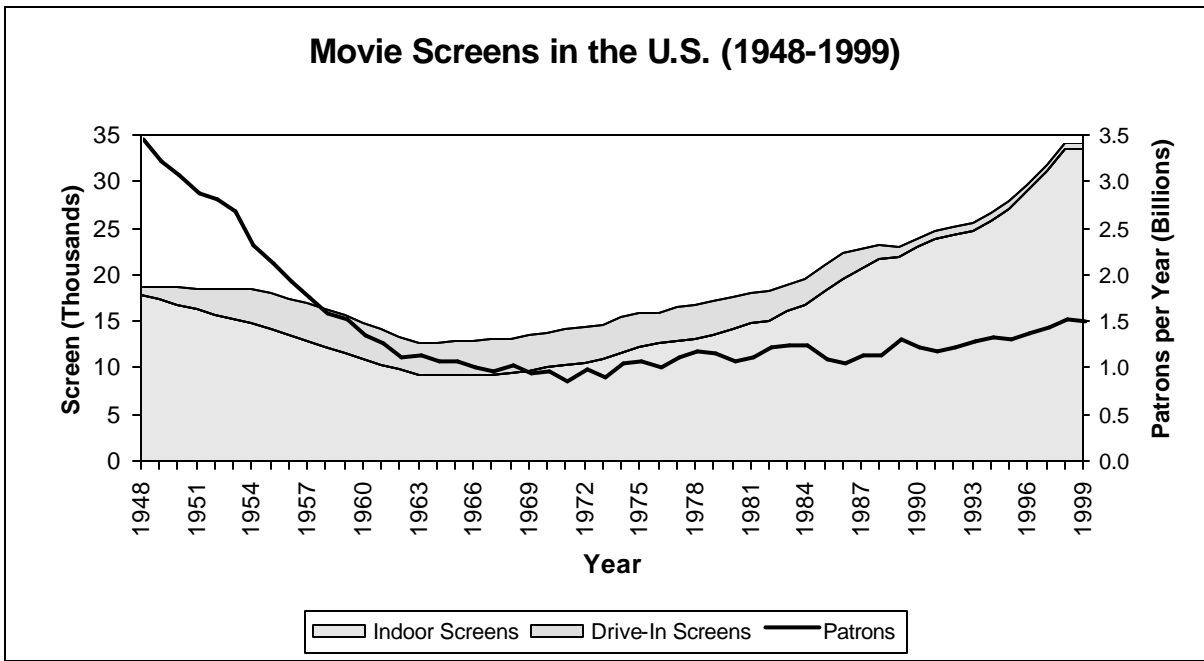
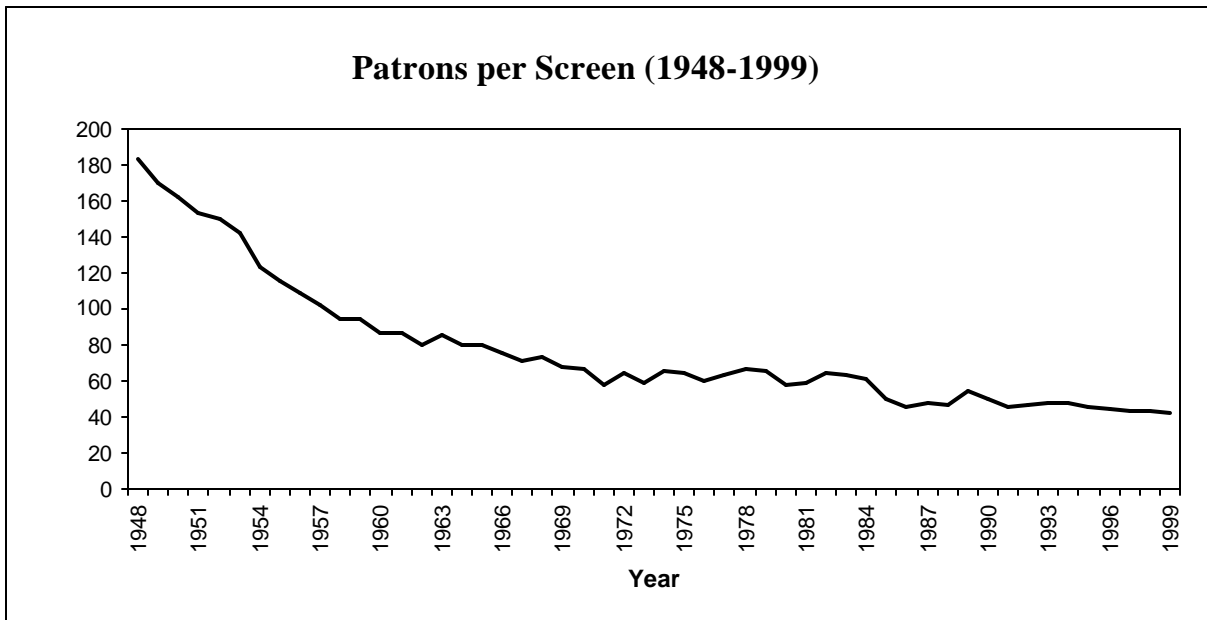


Figure 4



The combination of a relatively stable consumption and an investment race created a deep financial distress in the movie-theater industry, to the extent that in the past two years most of the major theater chains have filed for bankruptcy.<sup>8</sup> These conditions cast further doubts on the possibility that there is collusion between theater owners which is reflected in the practice of uniform prices.

#### ***IV. Optimal Pricing and Demand Patterns***

This section aims at describing the potential revenues that may be gained by using differential pricing at movie theaters. The next section addresses the potential concerns about applying differential pricing policies.

The quantitative analysis presented in this section is based on a data set which includes data for all the movies that were released in the United States between the years 1985 and 1999 (3,523 different titles). A detailed description of the data is beyond the scope of this paper and can be found in Einav (2001).

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<sup>8</sup> See STANDARD & POOR'S, MOVIES AND HOME ENTERTAINMENT (Nov. 16,2000), at 12-13; Harlan J. Levy, *Tons of Screens, Not Enough Viewers*, NY TIMES, Mar. 11, 2001, at C14.

### ***A. Optimal Pricing***

We start by considering the profit-maximization problem of a movie theater, which given the licensing-zone system used by the distributors enjoys some monopolistic power. For simplicity, and in light of the large over-capacity of the industry, we assume that the marginal cost of an additional moviegoer is zero.<sup>9</sup> Thus, given the movie schedule and allocation decisions [which we do not model; see for example Swami et al. (1999)], the theater solves:

$$(1) \quad \max_p \left( \sum_{i,t} p_{it} D_{it}(p) \right)$$

where  $i$  stands for a movie,  $t$  for a time slot,  $p$  is the vector of prices for all movies at all time slots in which they show, and  $D$  is the *residual* demand faced by the theater. Under the standard conditions on demand which guarantee that second order conditions are satisfied, it is easy to see that the optimal prices must satisfy the following first order conditions:

$$(2) \quad \forall i,t \quad D_{it}(p^*) + \sum_{j,t} p_{jt}^* \frac{\partial D_{jt}(p^*)}{\partial p_{it}^*} = 0$$

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<sup>9</sup> Any marginal-cost variation across movies would strengthen our argument that uniform pricing is suboptimal.

The key point in equation (2) is that generically the optimal price vector is not uniform, but varies over time and across movies, according to the different elasticities of demand. This result, of course, is not surprising as it merely reflects standard economic models. Others have supported this result with more complex models that address more specific characteristics of the entertainment industry. See, for example, Huntington (1993), Rosen and Rosenfield (1997), and Marburger (1997).

## ***B. Demand Patterns***

### ***1. Demand Characteristics***

An empirical foundation to support price differentiations among movies necessitates an estimation of demand elasticities, which cannot be undertaken due to the governance of uniform prices in the industry. Hence, we next discuss the enormous variation in the *total* demand in several dimensions, and argue that such variation in the total demand must necessarily reflect wide variation in demand elasticities. The anecdotal evidence we provide later on supports this conclusion.

The demand for motion pictures varies in three major dimensions: (a) different movies; (b) different seasons and days of the week; and (c) different stages in the movie's screen life. The analysis of the attendance of the movies released in the U.S. between the years 1985 and 1999 shows that price variation along the contours of these dimensions are likely to increase profits. Simply put, certain patterns of the demand can be identified with sufficient certainty to profitably set non-uniform prices.



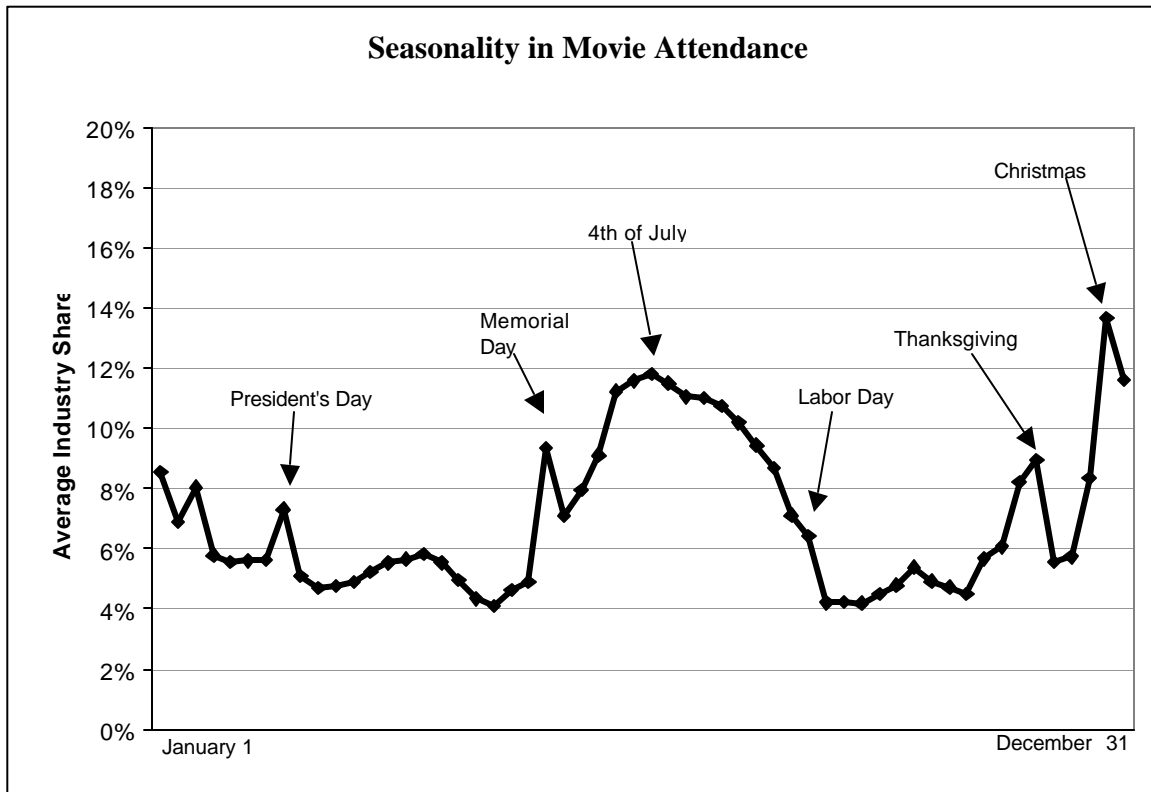
(i) *Specific movie demand.* While the motion-picture industry is notorious for the uncertainty surrounding the success of newly released films (see Subsection V.B below), there are many ways in which we could classify the expected levels of box-office revenues. Namely, quite often the demand for a specific movie can be roughly predicted. For example, production costs and gross box-office revenues are strongly correlated, with simple correlation coefficients of 0.5 to 0.7 for each year between 1985 and 1999 [see also Prag and Casavant (1994)]. Sequels perform quite similarly compared to the originals, at least in terms of order of magnitude [see also Ravid (1999)]. Furthermore, much of the uncertainty regarding a movie's success is revealed after its first weekend on the screens [Einav (2001)].

(ii) *Seasonal demand.* The demand for movies is cyclical with respect to the day of the week and the time of the year. The box-office revenues collected on a weekend (Friday, Saturday, and Sunday) account for more than 70% of the weekly box-office revenues, suggesting that demand for movies over the weekend is on average about 3.5 times higher than during weekdays. Similarly and as shown in Figure 5,<sup>10</sup> the demand during the summer and holidays is much higher than during the rest of the year.

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<sup>10</sup> Similar results for the years 1969-1984 can be found in Vogel (1998), at 41. Note, however, that this interpretation may be somewhat misleading. Einav (2001) shows that to some extent the demand follows the supply, which is partially determined by the industry beliefs regarding the demand.

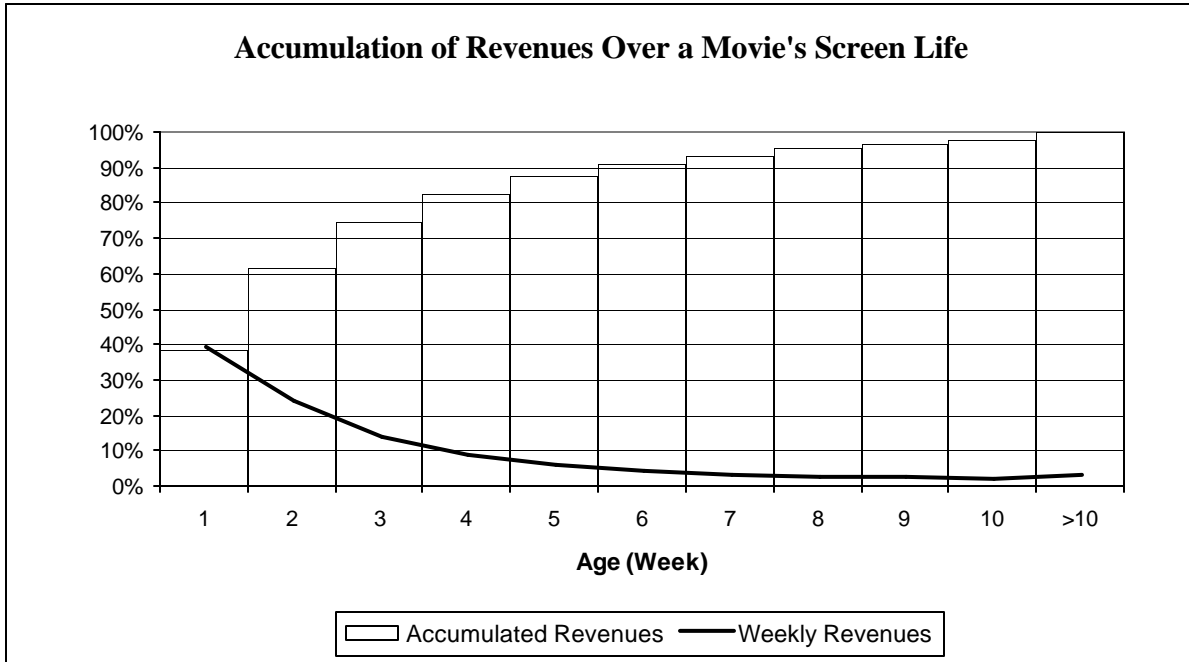
Figure 5



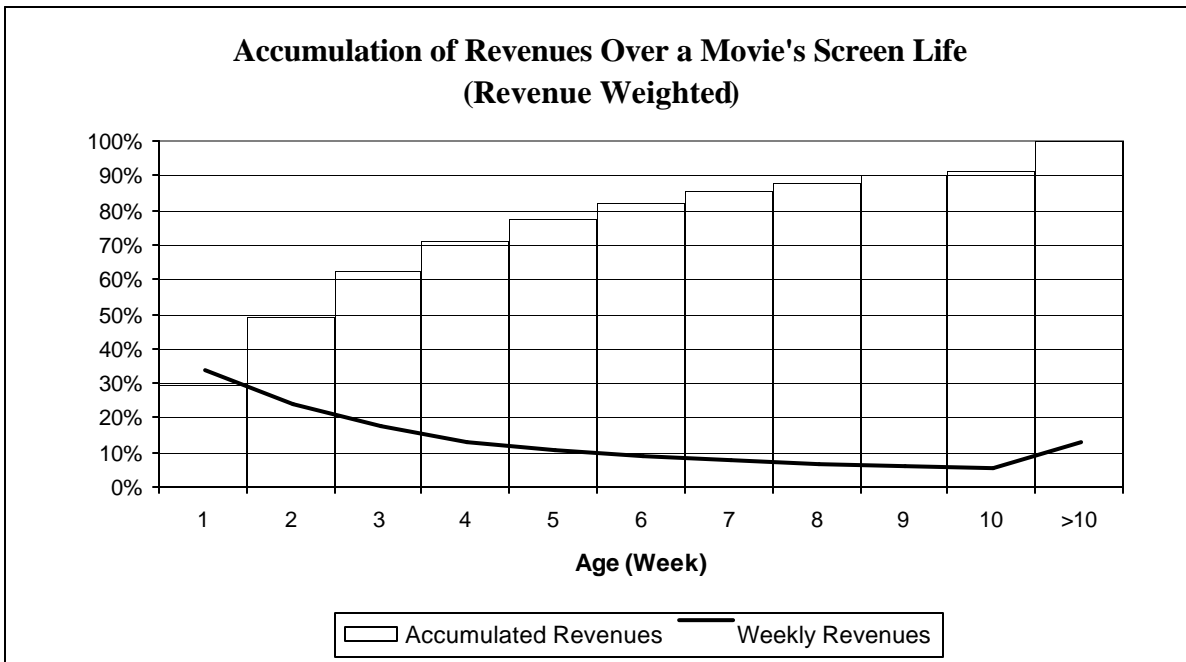
\* Industry shares are calculated by the weekly industry box-office revenues divided by the average ticket price, normalized by the size of the U.S. population.

(iii) *Demand over the movie's screen life.* The demand for movies strongly diminishes with the movie's screen life. Figure 6 exhibits the average accumulation of box-office revenues for all the movies released in the U.S. between 1985 and 1999 and Figure 7 presents the average accumulation of revenues for these movies weighted by their total revenues. The differences between Figures 6 and 7 illustrate that the decay rate of the box-office revenues over the screen life of a movie is related to its general success. The less successful the movie is at the box office, the shorter is its screen life. In other words, the demand for less successful movies decreases much faster than the demand for successful ones.

**Figure 6**



**Figure 7**



\* Weekly revenue shares are calculated by weighing the movies according to their total box-office revenues.

The foregoing discussion suggests various directions for differential pricing policies, whose adoption may be profitable. We do not claim that movie theaters can take full advantage of the observed patterns of demand, as there are substantial obstacles, some are discussed in the next section, that prevent it. Nonetheless, as the theoretical discussion suggests and supported by abundant anecdotal evidence: the market for watching movies at the theater is not exempted from the law of supply and demand.

## 2. *Anecdotal Evidence*

Generally speaking, the movie-theater industry worldwide can be characterized as very conservative with respect to its pricing policies and their downward stickiness. Examples of pricing sensitive to the demand are so rare that in 2000 a Chinese theater owner gained an article in *Time Magazine* for his revolutionized and profitable act of cutting the admission prices in his theaters by 67%.<sup>11</sup> Indeed, throughout the history of the industry there have been “pricing entrepreneurs” whose success further increases the puzzle of uniform pricing.

In 1970, for example, several theaters in Washington, D.C., slashed their admission prices on Mondays through Thursdays by 67%, and as a result significantly increased their box-office revenues and more than doubled their popcorn sales [Headley (1999)]. Evidently, this practice has not survived but we could not trace the reason for its abandonment. Several of the major chains have tried to revive the practice of discount days

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<sup>11</sup> Susan Jakes, *That's the Ticket: Slashing Prices, a Radical Distributor Gets Chinese Fans Back to the Movies*, TIME, Dec. 25, 2000, at 76.

in the 1980's and the 1990's, but although the results at the box-office were positive, these policies were abolished because of the per-capita requirements which made them unprofitable for the exhibitors.<sup>12</sup> 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, and Latin America.

The international markets, in which the general practice of uniform prices governs as well, offer even more inspiring examples. In Japan, tickets for *Jurassic Park* were profitably sold for a premium of 67%.<sup>13</sup> Similarly, in the Czech Republic, significant premia (30%-50%) were charged for *Independence Day*, *Evita*, and *Titanic*, boosting box-office revenues.<sup>14</sup> In Australia, prices are sensitive to variations in the seasonal demand and special events, such as the Sidney 2000 Olympic games during which prices were aggressively cut.

## V. *Possible Causes for Uniform Prices*

Our inquiry into the possible causes for uniform prices at the theater is based on many interviews and conversations with industry practitioners and observers. Here, we present only those causes we found to have some convincing power, and study their implications. We chose not to discuss other “excuses” for uniform prices because of their obvious weaknesses. In this group we count the arguments that theater owners are reluctant to price

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<sup>12</sup> See, e.g., Thomas R. King, *Coming Soon: Cut-Rate Films on Tuesday*, WALL STREET JOURNAL, Feb. 13, 1992, at B1.

<sup>13</sup> Monte Mackenzie, *Rising Boxoffice*, HOLLYWOOD REPORTER, Sep. 21, 93, at S1.

art, that they all collude to increase their profits, and that the costs of devising and applying profitable differential pricing will exceed any potential benefit.

### ***A. Perceived Fairness***

Businessmen often believe that price changes and price variation may antagonize consumers if they are perceived as unfair [Canetti et al. (1998)]. Coca-Cola, for example, took fire when it sought to take advantage of the law of supply and demand through a vending machine that adjusts its prices to the weather.<sup>15</sup> Not surprisingly, therefore, the notion of fairness is increasingly used in economic literature to explain why agents do not exploit temporary shortfalls in supply to increase profits.<sup>16</sup> Arthur Okun (1981), for example, argued that

“implicit 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.” (p. 170).

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<sup>14</sup> Cathy Meils, *Czech Public Tests Ticket Hike*, DAILY VARIETY, Jan. 8, 1997, at 39; Cathy Meils, *‘Titanic’ Raising Tix Tab*, Feb. 2, 1998, at 13.

<sup>15</sup> Constance L. Hays, *Variable-Price Coke Machine Being Tested*, NEW YORK TIMES, Oct. 28, 1999, at C1; Peter Coy, *The Power of Smart Pricing*, WALL STREET JOURNAL, Apr. 10, 2000, at 160.

<sup>16</sup> See, for example, Akerlof (1982); Kahneman et al. (1986a; 1986b); Rabin (1993); Franciosi et al. (1995).

We use the framework of Kahneman et al. (1986a) to delineate the fairness argument for uniform prices. For a moviegoer who is accustomed to uniform prices, the reference transaction for purchasing a ticket for a specific movie is purchasing a ticket for any other movie. Past experience shows that all the movies are priced the same, and this experience may also create the assumption that the exhibitor's costs do not vary across movies. Hence, modifying the uniform price allegedly in accordance with changes in general costs would be more acceptable than setting different prices for different movies. Similarly, fluctuations in the uniform price that are related to the demand, such as higher prices on weekends and holidays, are likely to antagonize moviegoers because they would be perceived as steps to increase the exhibitor's profits in an unfair fashion.<sup>17</sup>

There are three major factors that intensify the concerns regarding the consequences of this perceived unfairness: the nature of the product, the history of the industry practices, and the high substitutability of watching movies at the theater.

Movie theaters essentially sell access to pleasure and dreams, and the willingness to pay for such access greatly depends on the consumer's mood. As the president of the National Association of Theater Owners put it: "We want people to get in the habit [of moviegoing] on a regular basis and to see as many movies a year as possible. To build that

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<sup>17</sup> The same logic explains why many theater chains refund disgruntled moviegoers. See, Tom King, *Theaters Ease Refund Rules for Folks Feeling Flicks*, WALL ST. J., Nov. 24, 2000.

kind of loyal clientele, you can't bounce admission prices around them."<sup>18</sup> According to this point of view, pricing movies in any way other than uniformly would backfire.

The history of the practice is even a greater obstacle than the nature of the product, since the longevity of uniform pricing has perpetuated a unique reference transaction for the product. This consensus about the reference transaction, in turn, makes it harder to convince moviegoers that differential pricing is fair. In other words, the practice of uniform prices created an observed regularity, which in the course of the years has become the standard for fairness.

The substitutability of watching movies at the theater presumably justifies the present pricing policy within simple economic models. The progress and developments in the secondary markets and in television technologies provide moviegoers with good, albeit imperfect, substitutes for the theatrical experience, such as video-on-demand, pay-per-view, and DVDs. As a result, a moviegoer is more likely to respond to a perceived unfairness by substituting away from watching a movie at the theater. Of course, this factor changes its form over time according to the substitutes available to moviegoers.

Despite the difficulties that fairness perceptions impose on the transition to differential pricing, economically they do not justify uniform prices. After all, the reference transaction provides a basis for fairness judgment because of its regularity and not

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<sup>18</sup> Bill Kartoian, president of the National Association of Theater Owners, in response to the 1998 call of Edgar Bronfman Jr., cited in the text to *supra* note 1. Stephen Battaglio and Kirk Honeycutt, *Bronfman: Event Films Need Event Ticket Prices*, HOLLYWOOD REPORTER, Apr. 1, 1998, at 3.



because of an intrinsic justice.<sup>19</sup> There is no need for sophisticated schemes to change the unique reference transaction that governs at present, and in fact very simple marketing mechanisms could do the trick. The general rule is that consumers may be hostile towards price increases, but will always welcome discounts even if practically these create price differentiations that would otherwise be perceived as unfair. Hence, a regime of differential pricing can be established through discounts that are based on season, genre, weekday, and the movie's screen life. Once such a regime is established, price increases do not violate perceptions of fairness since the reference basis has been altered.

Moreover, since it is easier for people to forgo discounts than accepting surcharges [Thaler (1980)], a differential-pricing policy that is based on 'discounts' can facilitate price increases that are likely to be accepted. The cancellation of a 'winter discount' in the first week of May, for example, is likely to be more acceptable than charging 'summer prices' starting in the first week of May. Put simply, the transition to differential pricing depends to a large extent on its framing.

Similarly, the fairness argument does not exclude charging premia for many hits. In recent years production costs are highly publicized and constitute a vital element in movies' public relations. These costs, as noted, are strongly related to the box-office success of movies. Therefore, since the perceptions of fairness are affected also by the reference profit, it seems plausible that consumers will accept the connection between high

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<sup>19</sup> Kahneman, Knetsch and Thaler (1986a) point out that "psychological studies of adaptation suggest that any stable state of affairs tend to become accepted eventually, at least in the sense that alternatives to it no longer readily come to mind." (730-731). In this line, Franciosi et al. (1995) conducted several experiments and show that although the transition path to a new equilibrium may be affected by fairness considerations, the equilibrium outcomes reflect standard economic models.

production budgets and higher admission prices, *i.e.*, premia for expected blockbusters. This transition may, indeed, require some public relations, which is a very familiar art to the motion-picture industry.<sup>20</sup>

### ***B. Uncertainty***

Uncertainty is perhaps the most popular cause used to explain the difficulties in pricing movies [Goldman (1984), Caves (2000)]. As already noted in Section IV above, the short screen life of movies greatly limits the opportunity of theater owners to adjust prices once the uncertainty around the demand for a movie is resolved. In addition, even if there is sufficient time for such adjustments, considerations such as perceived fairness and prices as quality signals (see Subsection VI.D. below), pose some hurdles on adjusting the price of a specific movie after its initial admission price is set. Thus, the uncertainty about how moviegoers will value a new movie presumably prevents profitable price differentiation at the box office.

The uncertainty argument is definitely too broad. In Subsection IV.B above we outlined several major patterns of demand for watching movies at the theater. Some of these patterns have a recurrent nature and can be easily incorporated into the pricing of tickets with a low degree of uncertainty. The incorporation of other patterns is perhaps riskier and requires actual experiments. For example, there is nothing in the uncertainty

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<sup>20</sup> Several studies show that consumers are susceptible to explanations regarding the reasoning of pricing and alter the fairness perceptions following such explanations. Ng (1988), for example, used a simple survey to demonstrate how a short explanation may affect consumers' acceptance for a restaurant surcharges on Saturday night reservations.

regarding the success of new movies to affect the reasoning by which prices on weekdays should be lower than on weekends. On the other hand, the results of lowering the admission prices in the course of a movie's screen life are speculative, since the consumers' reactions are unknown and a tension between the exhibitors and the distributors is likely to rise in light of the present revenue-sharing formulas.

Furthermore, empirical evidence shows that the uncertainty is not as great as popularly argued, and the determinants of success in the industry are not totally random. We already noted that production budgets and sequels have a significant impact on box-office revenues. In addition, there are several other variables with great importance in predicting the success of movies at the box office. Participation of stars and top directors, critical reviews, ratings, competition from other movies, and advertising are all significantly related to revenues, and thus can also be incorporated into the pricing decisions.<sup>21</sup>

To sum up this point, although generally there is great uncertainty regarding the success of motion pictures, this uncertainty cannot explain why recurrent patterns of the demand for movies and widely acceptable proxies for the success of movies are ignored in pricing movies.

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<sup>21</sup> *See*, for example, Austin (1989); Litman and Kohl (1989); Litman and Ahn (1998); Wallace et al. (1993); Eliashberg and Shugan (1997); Ravid (1999). Similarly, several studies show that the nominations for an Oscar Awards for the best picture, the best actress, and the best actor contributes to a film's revenues. *See*, for example, Smith and Smith (1986); Dodds and Holbrook (1989); Nelson et al. (2001). Because of the short screen life of movies, the Oscar effects are relevant only to a small group of movies.

### *C. Agency Problem*

At the box office the interests of the exhibitors and the distributors diverge, although they share the revenues. For the exhibitor, a dollar spent by the consumer on refreshments is better than a dollar spent on a ticket since the markup on revenues from refreshments sales is more than 80%<sup>22</sup> and is not shared with the distributor. Therefore, the exhibitor's interest is not necessarily to maximize box-office revenues. The calculus of the distributor, on the other hand, is rather intricate, varies from movie to movie, and often depends on the effects of the attendance on ancillary and secondary markets. No less important, in practice the exhibitor is a servant of more than one master. At the multiplex, in any given time movies of *several* distributors are shown, and consequently it is even harder to align the interests of the agent (the exhibitor) with those of her principals (the distributors).

The argued connection between this agency problem and uniform pricing is twofold. First, it is argued that the exhibitors focus on optimizing the refreshment revenues, rather than the box-office revenues, because of the differences in the margins. Second, a price differentiation will complicate the already tough bargaining between exhibitors and distributors on licensing terms.

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<sup>22</sup> Loews Cineplex Entertainment, 2000 Annual Report, at p. 45.

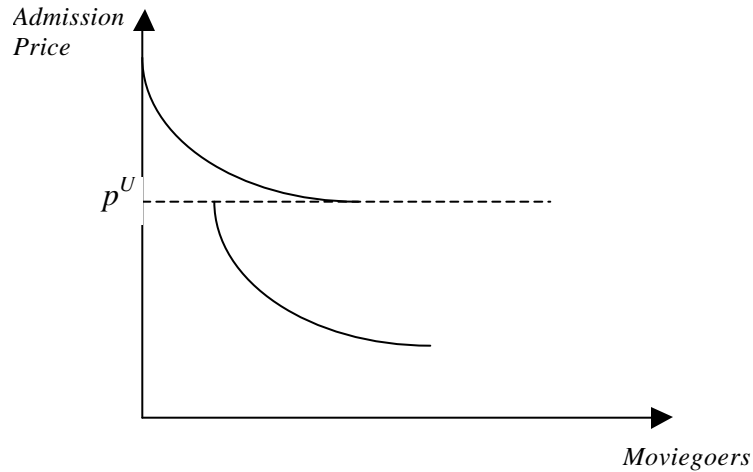
This agency-problem argument, however, is no more sound than the previous arguments for four reasons: (i) In many periods during history, including at present, there have been allegations in the industry that the level of admission prices is too high. Thus, had exhibitors focused only on refreshment revenues, they would have set lower admission prices to attract more patrons. (ii) The higher markup on refreshments cannot by itself, explain the neglect of the box-office revenue, which is still the major source of income for theaters; in particular, in the face of the present financial distress of the industry. (iii) Cyclical price differentiations are unlikely to worsen the problems of multiple principals and tough negotiation, since conceptually the frequency and direction of changes in the uniform price should not matter. (iv) It is in the interests of all parties to allow theater owners to maximize the pie of box-office revenues as it will allow bigger slices to all of them.

#### ***D. Unstable Demand***

There are several indications that raise the industry practitioners' concerns that moviegoers perceive the price as a signal for quality, and therefore a price differentiation would deter them from watching low-priced movies. In other words, the concern is that the demand for movies is unstable, where the instability point is the uniform price.

Figure 8 illustrates a hypothetical case of unstable demand. The demand curve behaves normally above and below the uniform price and it is characterized by discontinuity at the level of the uniform price.

*Figure 8*



The logic behind the unstable-demand argument is to some extent in contradiction to the logic of the fairness argument. Both arguments rely on the perception of reference transactions, but according to the fairness argument high prices are going to antagonize the consumers, whereas according to the unstable-demand argument the low prices are going to deter them. Still, both arguments coincide with each other in their alleged support for uniform pricing.

The question whether ticket prices are perceived by the consumers as signals for quality, thereby affecting their demand is an empirical one, and to the best of our knowledge has not been tested. Notwithstanding, be the empirical results of such a test as they may, the unstable-demand argument, just as the previous ones, cannot explain the uniform pricing phenomenon, as it fails to take into account the reoccurring patterns of demand.

## ***VI. Conclusions***

Unexplained uniform prices are a common phenomenon in the world that is outside economic textbooks. In this paper we tried to draw attention to this phenomenon by presenting the case of the movie theater. Despite the expected profitability, movie theaters seem to ignore the egregious patterns of the demand for their products, and deny the law of supply and demand by sticking to uniform prices. From this perspective, movie theaters are at the extreme even comparing to other institutions that employ uniform pricing.

Our investigation suggests that there are certain obstacles to the transition to differential pricing. These hurdles, however, can be overcome by relatively simple means, which are readily available to theater owners. The puzzle, therefore, remains unsolved – why do profit-seeking players persistently carry on with inferior pricing policies?

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