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GOVERNMENT INTERVENTION TO PREVENT BANKRUPTCY: THE EFFECT OF BLIND-BIDDING LAWS ON MOVIE THEATERS

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GOVERNMENT INTERVENTION TO PREVENT BANKRUPTCY:

THE EFFECT OF BLIND-BIDDING LAWS ON MOVIE THEATERS

by

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ABSTRACT

In the 1970s motion picture studios used blind bidding and non-refundable guarantees to reduce the risks of producing large budget films. However, theater owners claimed that blind bidding and guarantees shifted the risk to them and increased the likelihood of bankruptcy. In response to lobbying by theater owners, twenty-four states passed laws banning blind bidding between 1978 and 1984, while seven states also banned non-refundable guarantees. We find that the laws were not only ineffective in keeping theater owners from exiting the market; they may have been detrimental to theater owners converting to multiplexes at that time.

1. Introduction

As a result of the Supreme Court's 1948 landmark decision, *United States vs. Paramount et al.*, the five major, vertically integrated studios were no longer allowed to own the theaters that showed their movies. The major studios eventually adjusted to this decision and to changes in post-war demographics by producing a smaller number of large budget films and changing their distribution strategies. The most important change in their relationship with theater owners was an increased use of non-refundable guarantees and blind bidding, which required theater owners to bid six months to one year in advance of a film's release. Since bids were submitted prior to the completion of the movie, theater owners bid without seeing a finished copy. They received only a bid letter summarizing the plot and listing the names of the actors.

Studios preferred blind bidding given the timely return on investment and the advanced coordination of the film's release date with promotional efforts and booking of television advertisements, which were secured six months to one year in advance. Studios claimed that there would be lengthy delays in release dates without blind bidding. Since films were completed close to their release date, a requirement to show the movies in advance of the bidding process (that is, trade screening) may not have allowed enough time for films to arrive by the anticipated release date. In addition, they contended that prices would be

higher without blind bidding, because a bidding war would ensue for blockbuster films.[1]

Guarantees allowed the studios a minimum expected return on their investments and offset

the allegedly common practice of slow payment of film rentals by theater owners.[2]

On the other hand, theater owners alleged that overbidding due to blind bidding and

guarantees resulted in many of them going out of business and raised admission prices due to

the theater owners' need to cover extensive losses from overbid films.[3] They also claimed

that higher rental terms would make it more difficult for some theater owners to obtain

blockbuster films, since they would not be able to outbid the larger theater chains.

The Department of Justice was initially sympathetic to the theater owners' argument.

In response to the increased use of blind bidding, the Department of Justice concluded an

agreement with the movie studios limiting the number of films which could be blind bid from

January 1, 1969 to January 1, 1971 to three per studio per year. The two-year agreement

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[1] According to Jack Valenti, the Motion Picture Association of America president during this time period, "With the intense competition between big theater chains, when a movie is shown at a screening and it's an obvious smash, the bidding will go right through the ceiling. Exhibitors will bid more and will charge more at the box office" (Gottschalk, Jr., 1979, p. 1).

[2] For example, Mr. Valenti argued that "the end of blind bidding would mean fewer big budget, blockbuster movies …. movie companies just won't be able to put so much money into a film if they don't know for sure they have play-dates in theaters at one of the prime times" (Gottschalk, Jr., 1979). According to Valenti, "a substantial slowdown –let alone outright cutoff – of such revenue [from guarantees] would have a serious impact on production" (*Variety*, 1977, p. 7).

[3] For example, according to A. Alan Friedberg, National Association of Theater Owners (NATO) president, blind bidding added about 10 percent to film rentals each year, and without it, that savings could be passed along to the general public (Jacobson, 1979).

was renewed twice. However, the Department of Justice revoked all restrictions limiting

blind bidding in 1975 and the practice accelerated rapidly. Once the Department of Justice

removed the restrictions on blind bidding, theater owners actively lobbied state governments

to ban this practice. In response to the National Alliance of Theater Owner's (NATO)

efforts, twenty-four states banned blind bidding between 1978 and 1984.

In this paper, we report the results of natural experiments that for the first time

evaluate systematically the conflicting claims of the theater owners and studios concerning the

effect of laws banning blind-bidding and guarantees on the survival of theaters, ticket prices,

and release dates of new movies.[4] While we find that the strictest of the state laws helped

some theater owners remain in business longer, this effect was short-lived. The laws could

not offset the impact of significant structural changes in the market. Prior to the passage of

the first anti-blind-bidding law, theater owners had started increasing the number of screens

per theater in order to diversify risk and exploit economies of scale. We find that the number

of screens per theater was the main factor influencing the survival of theater chains during this

time period. In addition, we find evidence suggesting that the laws resulted in higher ticket

prices. We argue that the higher prices are evidence that the laws mitigated some of the

advantages to those theater owners who had modernized by increasing the number of

screens per theater.

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[4] For example, Orbach and Einav (2007) note that the practice of blind bidding is as
controversial as block booking, but less studied.

We analyze the impact of the laws on the survival of theaters in two ways. Initially, we use a natural experiment to compare a sample of theaters in three states that passed similar laws banning blind bidding in 1979 (Georgia, Tennessee, and North Carolina) with a sample of theaters in Florida that never had such a law. We use a probit analysis to model the probability of survival controlling for theater-specific, market-specific, and theater-chain-specific factors. We find that the laws of Georgia, North Carolina, and Tennessee did not have a statistically significant impact on the survival of theaters.

Given the lack of an impact of the law in these states, we use a second natural experiment with more detailed panel data for a sample of theaters in the two largest states with the strictest laws: Ohio and Pennsylvania. The Ohio and Pennsylvania laws were considered the most restrictive, because they also banned guarantees. We compare the survival rates of theaters in Ohio and Pennsylvania with those in Michigan and New York. Neither Michigan nor New York had laws against blind bidding or guarantees. We find that the laws of Ohio and Pennsylvania had an initial impact on survival times. However, the laws' effect diminished rapidly over time and was completely reversed within a few years.

We also use natural experiments to investigate the conflicting claims about admission prices by comparing admission prices for the same movies in Cleveland, Philadelphia, Pittsburg, and Detroit. We find that ticket prices were relatively higher in Ohio and Pennsylvania after passage of the laws. Lastly, we measure the impact of the laws on release dates. We pair Cleveland with Detroit, and Philadelphia with New York City. We find that

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Cleveland exhibited films actually sooner after the law was enacted. Philadelphia did not exhibit films any later after the passage of the law, and in most cases it received films at the same time as New York City. Therefore, the data does not support the claim that the laws produced widespread delays.

In the next section we provide an historical background of contractual relations between the studios and theater owners. In Section 3 we present the empirical models and results concerning theater survival. Sections 4 and 5 present the evidence of the laws' impact on prices and delays in release dates. Section 6 provides a conclusion.

2. Historical Background

Tension between the studios and independent theater owners dates to the 1930's and 1940's when the five largest studios (Paramount, Loew's/MGM, Warner Brothers, Twentieth Century Fox and RKO) were vertically integrated companies. The studios controlled a majority of the first and second-run outlets in major cities. Vertical integration allegedly minimized competition from independent producers, movie companies, and theater owners.

The *Paramount* decision marked the beginning of a downward industry trend that persisted into the early 1970's. As argued by Sedgwick (2002), the timing of the theater divestiture did not benefit the studios, as the selling coincided with the baby boom phenomenon after the end of World War II. When the war ended, consumers bought homes and durable goods for their newly formed families. While better educated, higher

income persons generally frequented movie theaters more often, this segment of the population was having children at an historic pace and moving farther away from the centrally located theaters which the studios owned. The studios had to divest their theaters at a time when the value of their holdings was declining due to lower box office revenues.

Television accelerated the decline in theater attendance. By 1954 half of U.S. households had a television set. By 1959, eighty-five percent of households had one (Waterman, 2005, p. 34). Television quickly became the substitute for going to theaters. As a result, film output dropped, as the studios concentrated on producing a smaller number of large budget films. Figure 1 shows the total number of tickets sold between 1970 and 1985, while Figure 2 shows new releases for this time period. By 1970 the number of new films had reached a low point. Box office returns also became more volatile than in the pre-television years. At the time *Variety* defined a successful film as one where the domestic rentals covered most of the cost of producing the film. By this definition of success, about 33 percent of big budget films were successful between 1976 through 1981 (*Variety*, 1986, p. 9). In addition, the most important new releases were concentrated in three predictable periods: Christmas, pre-July 4th, and Easter. As a result, some theater owners even resorted to closing their doors temporarily for a few weeks or months until a peak season would

arrive.[5] The short supply of films escalated rental terms to a point where even larger theater

chains claimed it was difficult to pay for them.[6]

In response to theater owners' concern about the increased use of blind bidding, the

Department of Justice limited the practice between January 1969 and January 1975.[7] Each

of the eight major studios at that time could blind bid up to three films per year.[8] Theater

owners had the opportunity to cancel the bidding arrangement up to forty-eight hours before

the play-date, but it was difficult to replace the scheduled film with anything comparable.

After January 1975, all restrictions on blind bidding were removed and the practice became

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[5] Joseph Alterman, executive director of NATO, stated in 1977, "This is the first time in
history that so many large, economically successful theaters closed because there were no
movies" (Gottschalk, p. 29).

[6] The rental terms are the cost paid by theater owners to distributors for the right to exhibit a
film for a specified period of time. Rental terms were on a sliding scale basis with a higher
percentage allocated for the movie studios, and theater owners able to clear their house
expenses plus receive a lower percentage of the film rental. In the first few weeks of a new
release the studios often received the highest of 90 percent of the box office in excess of a
minimum negotiated house expense (which was called 90/10 percentage terms) or 70
percent of the total box office. The percentage the studios received dropped as the film
progressed into later runs.

[7] Blind bidding was made illegal by a 1940 Consent Degree, however, a 1944 District Court
opinion permitted it as long as exhibitors could reject films which were not trade screened.

[8]John Shenefield, an assistant U.S. attorney, stated that "[Blind Bidding] denies exhibs the
right to make an informed judgment as to artistic or box-office merit, tying up playing time,
forcing huge guarantees, and resulting in 'examples that can be cited of exhibitors having
been driven into bankruptcy by inferior films which were blind bid….It is not surprising that
…only the large chains are still operating profitably. Blind bidding appears to contribute to
this trend toward concentration of the exhibition market" (Jacobson, 1978).

commonplace. The elimination of the restrictions on blind bidding in 1975 built momentum

for the passage of the state laws. Table 1 lists the 24 states that passed a law.

During the same time period the industry was undergoing important structural

change. The box office success of *Jaws* in 1975 marked a change in film release strategy at

the same time as theater owners were lobbying for legal intervention. Universal released the

film simultaneously in 500 theaters (Paul, 1994). This strategy was intended to take

advantage of the mass advertising campaign which touted the film. Previously, movie

companies commonly kept the number of prints below 400 in order to keep down costs

(Gottschalk, Jr., p. 46). This number increased to between 1,000 and 1,500 by the early

1980's (Myers, 1983, p. 278). At the same time theater owners started building multiplex

theaters in shopping centers and malls. In addition, it was common for exhibitors to convert

existing single screen theaters into twin or multiple screen houses. From 1975 to 1985, the

number of screens increased by 51 percent, from 12,168 to 18,372. In 1978, 10 percent of

indoor theaters were multiplexes; 80 percent of which were twin theaters (International

Motion Picture Almanac, 1978, p. 31A.). Figure 3 displays the growth in the number of

screens from 1970 to 1985.

Theater owners had several reasons to switch to multiple screens. First, theater

owners were adding screens to reduce risk.[9] Second, multiplex theaters, especially new

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[9] Marvin Goldman, president of National Association of Theater Owners (NATO) explained
that "if you have one theater with one thousand seats and you have a film not doing well,

ones, were designed to best exploit concession sales, because the design of the buildings

focused on a centrally located concession stand. Third, theater owners were expanding to

shopping centers. Since shopping center developers constructed the theaters, theater

owners limited their investment to the furniture, fixtures, and equipment.[10] In the next section

we provide empirical evidence that the number of screens, not laws banning blind bidding

and guarantees, was the most important factor in predicting a theater's survival.

3. BLIND BIDDING, GUARANTEES AND SURVIVAL

In this section we report the results of natural experiments measuring the impact of

banning blind bidding and non-refundable guarantees on the probability of a theater owner

exiting the market. First, we use a probit model to estimate the impact of the laws of

Georgia, North Carolina, and Tennessee that each banned blind bidding in 1979. Second,

for comparative purposes we also use a probit model to estimate the impact of the stricter

laws of Ohio and Pennsylvania that banned both blind bidding and guarantees. While the

number of screens per theater had essentially identical effects on survival in all five states

compared to the control groups, only the laws banning both blind bidding and guarantees

had a statistically significant impact on survival.

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you're in trouble", but "if you have a six one hundred sixty seat theaters, you might have
three or four winners and two or three losers. You're better off," (Gottschalk, p. 29).

[10] "The exhibition company that leases property may spend only $100,000 to $150,000 to
equip and modestly furnish each auditorium, and it does not need to tie up capital in cinder
and cement" (Guback, 2001, p. 129).

Third, we use a duration model and a more detailed data set to determine the effect of Ohio's and Pennsylvania's stricter laws over a longer period of time. We find that although the laws in Ohio and Pennsylvania initially increased the probability of survival, this effect was short-lived and soon reversed. The laws only delayed for a short time the inevitable as market and industry forces offset the effect of the laws.

3.1   Probit Analysis of Banning Blind Bidding

Georgia, North Carolina, and Tennessee all passed similar legislation in 1979 banning blind bidding but permitting guarantees. We treat the passage of the anti-blind bidding laws as a natural experiment and use theaters in Florida, which did not pass a law, as a control group. Probit models have been used often to examine firm survival.[11] The probit model assumes that the probability that an event occurs follows the standard normal cumulative density function.

$$\text{Prob}(Y = 1) = \int_{-\infty}^{B'x} f(t)dt \tag{4.1}$$

The probit model assumes that the likelihood that an event occurs depends on an unobservable index function. In this case, each theater has a critical value of the index function above which the theater exits the market. The critical values are assumed to follow a normal distribution.

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[11]For example, Dunne, Klimek, and Roberts (2005) recently examine the survival rates of seven regional manufacturing industries in the U.S. using plant level data.

3.1.1 Data

To estimate the immediate impact of the laws we use data for the two years before and after the passage of the laws (that is, 1977 and 1981). The data consist of 228 theaters from thirteen cities in the four states: Florida (19), Georgia (46), North Carolina (27), and Tennessee (37).[12] We compiled the data set in the following manner. For the first week of June 1977 and June 1981, we recorded the name of all first-run theaters, the number of screens at each theater, and the name of the parent theater chain if relevant. Since we could not always identify the theater chain which operated a theater, we used the International Motion Picture Almanac (IMPA) to obtain additional information. The newspapers listed theaters in the city and in the nearby suburbs as well, therefore the data include the entire metropolitan area.

3.1.2 Empirical Model and Results

We include controls for theater-specific, market-specific, and theater-chain-specific factors. The number of screens per theater is a control for economies of scale, quality, and the potential for risk reduction through diversification. Theaters with more screens can diversify the risk of committing to any one film, are more cost efficient, and offer more

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[12] Data come local newspapers in the following cities Fort Lauderdale, Jacksonville, Miami, Orlando, and Tampa, Florida; Atlanta, Columbus, and Savannah, Georgia; Charlotte and Raleigh, North Carolina; and Knoxville, Memphis, and Nashville, Tennessee.

choices to consumers (a measure of quality). We include the number of screens per theater in 1977 and expect this variable to be inversely related to probability of exiting the market.[13]

The Herfindahl-Hirschman Index (HHI) controls for the degree of market concentration in the local market. In industry-specific studies, high concentration ratios and HHIs are associated with lower entry rates. For this reason, we expect this variable to be negatively related to exit. We include the total number of screens a theater chain operated in the U.S. as a control for firm size. We are unable to measure consistently the initial size of theater chains, so we include the total number of screens in the U.S. as of 1975. A priori, we anticipate that larger theater chains are less likely to exit. We include a dichotomous variable with a value of one if the theater was in Georgia, Tennessee, or North Carolina and zero otherwise.

Table 2 provides the results along with summary statistics for each variable. The HHI and the total number of screens a theater operates in the U.S. do not have a statistically significant effect. The number of screens at the theater is the only variable with a statistically significant coefficient at the 5 percent level. An increase in the number of screens at a theater decreases the probability of the theater exiting during this time period by approximately fifteen percent. Most importantly, controlling for the number of screens at the theater and

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[13] We assume that a theater exits the market if any one of the following occurs: (1) there is a change in ownership, (2) a theater is no longer listed in the newspaper, or (3) a theater no longer exhibits first-run films.

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other industry characteristics, we find that theaters in Georgia, North Carolina, and Tennessee did not have statistically different exit rates than those in Florida.

3.2 The Impact of Banning Both Blind Bidding and Guarantees

It is possible that the laws in Georgia, North Carolina, and Tennessee did not have an impact, because the laws did not also ban guarantees. As a result, we next considered the effects of the more restrictive laws of Ohio, passed in October 1978, and Pennsylvania, passed in May 1980. Both laws banned blind bidding and guarantees. We again use a natural experiment this time using theaters in Michigan and New York as the control group. We present results using both a probit analysis and a duration model.

3.2.1. Data

While we collected data comparable to the first sample in order to conduct a probit analysis, we also expanded the data set for a more detailed survival analysis. Our data for the survival analysis include annual data starting with the year 1977 and extending to the year 1985 for 724 movie theaters from twenty-two cities in Ohio (204), Michigan (135), Pennsylvania (178), and New York (207). We recorded all theaters listed in the local newspaper for each city every year from 1977 to 1985. Each year was a snapshot of the market on the final Friday before the 4th of July, one of the peak periods in the year.[14]

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[14] We used several other references to fill gaps in the data. The IMPA is an annual publication that listed large, medium, and small exhibition chains. However, it did not provide a complete listing of all theater chains. In 1975, the almanac accounted for about 53 percent of total screens. The remaining information came from *Variety*, two internet sources

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3.2.2. Probit Results

While the laws for the three states in our first sample did not have a statistically significant effect on the exit rate, the laws banning both blind bidding and guarantees do. Table 3 shows that, ceteris paribus, theater owners in Ohio and Pennsylvania were more likely to stay in business longer than those in the other states. Interestingly, the coefficient for the number of screens per theater is essentially identical to that for the first sample, while as before none of the other control variables had a statistically significant effect on the exit rate.

3.3 Survival Analysis

While a probit analysis provides an approximation of the effect of the laws over an extended period of time, a theater's propensity to survive may change as time passes. Survival analysis permits the use of time-varying covariates, while the probit analysis does not. The hazard function, $h(t)$, is defined as

$$h(t) = \lim_{\Delta t \to 0} \frac{\Pr\{t \leq T < t + \Delta t \mid T \geq t\}}{\Delta t} \tag{1}$$

The numerator represents the probability a theater survives between t and Δt, given that it has survived up to that point in time. The inclusion of the conditional statement is necessary,

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(cinematreasures.org and cinematour.com), and *Motor City Marquees*, a thorough reference about theaters in the Detroit Area from 1906-1992. We also contacted several theater owners from the blind bidding years for additional clarifications: Joel Resnick, former President of NATO; Bruce Olson, Senior Vice President of Marcus Theaters; Dick Fox, former President of Fox Theaters of Reading, Pennsylvania; and Jerome Gordon, President of Mid-Atlantic NATO.

because some theaters may have already exited the market by period t. Since the numerator

alone is a non-decreasing function of t, it is divided by Δt. In addition, the hazard includes

the limit of t representing increasingly smaller intervals of t and Δt until a limiting value is

reached.

In this model T_i is a random variable representing time for the ith individual so that

$$\log T_i = \boldsymbol{b}_0 + \boldsymbol{b}_1 x_{i1} + ... + \boldsymbol{b}_k x_{ik} + \boldsymbol{s} \boldsymbol{e}_i , \qquad (3)$$

where x_{ik} are predictor variables, $\boldsymbol{e}_i$ is a random error term, and $\boldsymbol{b}_0,...,\boldsymbol{b}_k$ and $\boldsymbol{s}$ are

parameters to be estimated. We assume that $\boldsymbol{e}_i$ follows a Weibull distribution. McCloughan

and Stone (1998) used this model to investigate the shape of the hazard function for foreign

manufacturing plants and to determine whether greenfield investments survive longer than

acquisition plants.[15] In addition, Chen (2002) utilized a Weibull model to examine the

lifetimes of petroleum refining plants after the deregulation of crude oil markets. The Weibull

model assumes $\boldsymbol{e}_i$ follows the extreme value distribution with the probability density

function, $f(\boldsymbol{e}_i) = \exp\{\boldsymbol{e}_i - \exp(\boldsymbol{e}_i)\}$. For $\boldsymbol{s}$ equal to 1, the Weibull model simplifies to the

exponential function which has a constant hazard function. For $\boldsymbol{s}$ greater than 1, the hazard

decreases over time. When $0.5 < \boldsymbol{s} < 1$, the hazard increases at a decreasing rate. When

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[15] Greenfield investments are a form of foreign direct investment where a company opens
new facilities in a country creating new employment opportunities in response to government
incentives such as tax benefits or some other kind of subsidies.

$0 < s < 0.5$, the hazard increases at an increasing rate. When s equals 0.5, the hazard function is an increasing straight line from the origin.

3.3.1 Explanatory Variables

In addition to controlling for the number of screens per theater, we also include controls for firm size (total number of screens in the U.S.), prior entry and exit of competitors, and industry level measures of the number of new releases and total tickets sold. Numerous empirical studies find that entry and exit rates are positively correlated phenomena: higher (lower) entry rate industries are also higher (lower) exit rate industries. As a result, we use the gross entry rate in the local market as a control variable. We define the gross entry rate as the number of new theaters divided by the total number of theaters in the current year. Since the dependent variable is time, higher entry rates imply shorter survival times for exiting theaters, ceteris paribus.

Through the early 1980's theater owners frequently complained about the shortage of films. We expect more releases in a given year to extend how long a theater owner will survive. However, the movie studios' focus on large-budget films in the early 1970's also affected theater attendance. We include the aggregate number of tickets sold per year as a covariate and expect that stronger demand correlates with theater owners remaining in operation longer.

As before, we include a dichotomous variable to capture the effect of the laws. However, a dichotomous variable is only one way for capturing the effect of the law in a

duration model. It is possible that the relationship between a theater owners' survival and the laws may be more complex. For this reason, we also test for the length of the impact of the law by interacting this variable with a dichotomous variable for the years 1982 to 1985.

We measure the number of tickets sold and the entry rate as a one-period lag and the number of new releases as a one-period lead. We assume theater owners used the previous year's box office success as an indication of how successful the present year would be. However, theater owners are generally aware in time t of the number of new releases planned for time t + 1.

3.3.2. Results

Our estimates of the parameters of the duration model for Ohio, Michigan, Pennsylvania and New York are shown in Table 4. Since the laws in Ohio and Pennsylvania were passed a year and a half apart, we also present results separately for these two states in comparison to both New York and Michigan both with and without the interaction term controlling for the longer term effect of the laws.

The results are similar in all cases. The coefficient for the number of screens per theater is positive and statistically significant, indicating that a theater with more screens stayed in business longer. The coefficients for the number of new releases and number of tickets sold are positive and statistically significant. We find that the coefficient for local rate of entry is not statistically different from zero.

As was the case in the probit analysis, the laws result in longer survival times when measured only by the dichotomous variable. Controlling for the possibility that the impact varied over time, we find that the impact of the laws was significantly and positively correlated with survival times from 1978 to 1981. However, theaters left the market at a faster rate in these states starting in 1982. As a result, while the laws initially encouraged some theater owners to stay in business longer, theater owners eventually realized that the law was not going to sustain them. As in the case of the probit results, theater owners that survived had adjusted by increasing the number of screens per theater.

The estimated Weibull parameter, s , ranges between 0.25 and 0.33 and is significantly greater than zero but less than one. Since the null hypothesis that s equals 1 is rejected, the theater data are not consistent with an exponential model. More specifically, the function follows the pattern of positive duration dependence: the hazard rate of exit remains lower for earlier years but it increases at an increasing rate in later years.

3.4 Summary of Results

Overall, we find that the laws banning only blind bidding had no effect on the likelihood of a theater owner staying in business, while the stricter laws that banned both blind bidding and guarantees had a limited and short-lived effect that was soon reversed. In our samples we found that the one consistent factor in theater survival was the number of screens at the theater. We also found that there were forces that resulted in a rising probability that traditional theaters would exit the market. As a result, even though the

strictest laws delayed the switchover to multiplexes for a short time, the inevitable structural change in the exhibition market soon offset the impact of these laws.

4. Admission Prices

We now investigate the opposing claims made by theater owners and studios concerning the impact of the anti-blind bidding laws on admission prices. As noted earlier, the studios and distributors argued that the laws would increase the prices of those films that would have been blind bid otherwise. Theater owners argued that prices would be lower. To test these claims we used a natural experiment of average admission prices in Detroit with those in Cleveland, Philadelphia and Pittsburgh before and after the passage of the laws and find evidence that the laws raised admission prices. We provide an explanation for why one should expect this result and why one could argue that the laws may have been even detrimental to most theater owners.

4.1. Background

In general, admission pricing appears to be at odds with the predictions of traditional pricing models. For example, a recent literature documents the general industry practice of constant admission prices across motion pictures at a given theater and over time for a specific motion picture regardless of demand (Orbach and Einav, 2007). While there is price discrimination across consumer groups (adults, children under twelve years of age, seniors over sixty years of age, and veterans), there has been little use of price discrimination by time of day or day of the week until more recently (Davis, 2005).

In addition, even today theater owners and distributors have potentially conflicting incentives concerning admission prices. For example, while they both share box office receipts, theater owners keep all of concessions sales. As a result, several authors have noted that theater owners would prefer lower prices in order to increase concession sales. While theater owners can specify lower admission prices in their bids to the distributors, they are unlikely to be granted the right to show the film. Even though price fixing is illegal per se in the United States, theater owners are technically proposing the price to be charged, making the implicit fixing of admission prices in the contract exempt.

As a result, prices are determined implicitly by the distributors in order to maximize sales revenue with the most significant variation across contracts the percentage of the sales revenues to be given to the distributor (Filson et al).[16] There appears, however, to be some variation in prices due to the degree of market competition. For example, using data from 1993 to 1997, Davis finds that admission prices are slightly lower in more competitive markets.

Despite the general lack of variation in ticket prices found in the literature, we expect that the laws could influence admission prices if they impacted a theater owner's marginal costs or bid price. For example, Blumenthal (1988) analyzed a number of contracts involving theater owners in both blind bid and trade screen states and found that bid prices were

higher on average in states that had banned blind bidding.[17] Since the admission price

schedule is a part of the bid, this result gives some indirect support to the studios' claims that

banning blind bidding could lead to higher admission prices as theater owners attempt to out-

bid one another for the films with the largest box-office potential.[18] As a result, we

anticipated that the laws banning blind bidding could result in higher ticket prices due to

higher bid prices for the most successful films.

4.2. Data and Methods

Because of data availability, we compare prices in the three cities of Cleveland,

Philadelphia and Pittsburgh with those of Detroit. We obtained the data from *Variety,* which

sampled between ten and twenty theaters weekly from fifteen cities. Most cities appeared at

least once a month. We sampled each city quarterly. Each sample included cities in the

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[16] Recently Moul (2007) uses a structural model to measure the degree of collusion among distributors. In order to estimate his model he assumes that admission prices are exogenous to both distributors and exhibitors on a weekly basis.

[17] Forsythe, Isaac, and Palfrey (1989) used blind bidding as motivation for laboratory experiments with *n* buyers and one seller in a sealed-bid, first-price auction. They concluded that their results implied that the anti-blind bidding laws were unnecessary as buyers would learn that a seller withholds information when it is unfavorable. In their model a seller would abandon blind bidding once all buyers learn that withholding information was in the seller's best interest and not theirs. However, the studios generally did just the opposite by trade screening relatively less desirable films and blind bidding highly anticipated films.

[18] While the studios/distributors' main marginal cost per film is due to advertising expenditures, studios incurred additional expenses in trade-screened states due to the costs of sales prints especially made for the purpose of trade screening. According to Barry

entire metropolitan area. For example, Detroit included theaters from surrounding areas of Wayne, Oakland, and Macomb counties.

Since theater owners bid on films six months to one year in advance of the release date, we cannot be completely sure which films were blind bid during the first year that the anti-blind bidding laws were in effect. For example, Ohio enacted the law in October 1978, but theater owners may have bid for films to be released in April 1979 or as far away as October 1979. We address the possible lagged effect of the law on films by examining admission prices using two different time periods: (1) two years before and after a law, and (2) three years before and after a law. As before, we consider the passage of the Ohio and Pennsylvania laws a natural experiment and compare the change in the population means. We assume that relative changes in price approximate the effect of the law.

Figure 4 displays average admission prices for Cleveland and Detroit from 1975 to 1981. Detroit's average prices remain consistently above Cleveland's throughout. Average admission prices for Cleveland and Detroit remain relatively steady before the implementation of the law, implying the assumption of a common trend appears valid. Table 5 shows that Detroit's prices increase by seven cents and Cleveland's rise by 16 cents after passage of the law. Since the seven cent increase in average prices is assumed to control for how Cleveland's prices would have changed in the absence of the law, the Ohio law

Reardon, distributional president at Warner Brothers, the additional expense to trade screen amounted to approximately $50,000 per film (Robbins, 1985, p. 80).

significantly increases Cleveland's average prices by nine cents. Cleveland's relative average prices are lower by only one cent, however, when we compare prices starting three years prior to the passage of the law.

Figure 5 shows average prices in Philadelphia and Pittsburgh versus those in Detroit from 1977 to 1983. For the first two years, prices are nearly identical. In 1979 and 1980, the difference in average prices remains relatively steady at 10 and 15 cents, respectively. Beyond 1980, the difference in average prices increases, ranging from 36 to 41 cents. Table 6 shows that average prices for Philadelphia and Pittsburgh rise after the passage of Pennsylvania's law by 43 cents while Detroit's increases by 11 cents for a statistically significant 32-cent increase in admission prices. When we extend the time period to a total of six years, the law causes higher average admission prices for Philadelphia and Pittsburgh by 53 cents.

5. Delays

For completeness we also examined the claim made by movie studios that the laws would significantly delay the release of films. The studios warned of delays of three to six months, but some theater owners expected delays of at most one month (Brill, 1978). We investigate whether the anti-blind bidding laws of Ohio and Pennsylvania produced delays by tabulating the number of weeks films had been released in each city. Given available data, we paired Cleveland with Detroit and Philadelphia with New York City. We find evidence that Cleveland and Philadelphia do not exhibit films later after the passage of the laws.

To this day release dates for large budget films follow strong seasonal trends. Einav (2007) has shown recently that the release pattern is even more pronounced than that expected due to seasonality in demand. He contends that the pricing rigidity documented earlier in this paper creates an amplification effect. Given this seasonal release pattern and the relatively low number of releases during the earlier time period of our study, delays in release dates in states banning blind bidding would have reduced the supply of films during peak periods and, possibly, result in significantly lower revenues. As a result, despite the studios' warnings about long delays, they had a strong incentive to provide films in a timely manner. Lost revenues from delayed films in the critical opening weeks as a film could be substantial.

5.1. Data and Methods

As mentioned earlier, studios generally blind bid the top grossing films.[19] *Variety* reported the number of weeks a film was exhibited in a city for the top twenty films in each year from 1975 to 1985. *Variety* sampled theaters from downtown areas and surrounding suburban areas in the cities of Cleveland, Detroit, and Philadelphia. For New York City, *Variety* consistently sampled theaters in Manhattan.[20]

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[19] "The top 10 grossing films last year as listed by *Variety* were all blind bid. The worst 10 of the last year were trade screened" (Bratman, 1980).

[20]In some cases, we were unable to obtain information for all of the top twenty films each year. For example, *Benji* (1974) was the third highest grossing film in 1975, but *Variety* did

5.2   Results

Before the Ohio law, Cleveland exhibited 24 films later than Detroit did and the average delay was 3.75 weeks. After passage of the law, only eight films were delayed with the average delay of 1.75 weeks. In addition, before the law we find eight times where Cleveland exhibited a film before Detroit and 67 times were films were released at the same time. After the law, 60 films were exhibited in Cleveland before Detroit, and 53 were released at the same time. We find the average weeks of delay are 0.81 before the law and -0.44 after it. Therefore, after the Ohio anti-blind bidding law, films were exhibited *sooner* on average in Cleveland than in Detroit.

Before the passage of Ohio's law, this percentage ranged from 15 to 35 percent. After the law, the percentage peaked at 15 percent in 1980 and 1981, and dropped between 0 and 5 percent through 1985. Therefore, delays occurred less frequently after passage of the Ohio law.

Before passage of the Pennsylvania law Philadelphia received films after New York City 47 times with the average delay of 2.78 weeks, while after passage of the law only six delays occurred with an average length of 3.5 weeks. Prior to passage of the law, there were two instances when Philadelphia exhibited a film before New York City and 77 times

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not furnish information about its film release pattern for Cleveland, Detroit, Philadelphia, and New York City. In circumstances like this, we included the next highest grossing film.

films were exhibited at the same time. After passage of the law, Philadelphia exhibited a film before New York City one time, and 87 times films had the same release date. The average weeks of delay before the passage of the law were 0.52 weeks and 0.36 afterwards.

In summary, after passage of the Pennsylvania law, delays occurred less frequently and films were released about the same time on average. The percentage of films delayed in Philadelphia drops sharply from 60 percent in 1975 to 10 percent in 1980. From 1981 to 1985, the percentage of delayed films does not exceed 10 percent. This provides further evidence that delays occurred less frequently after the Pennsylvania law.

7. Conclusion

Laws banning blind bidding and guarantees were intended to help theater owners remain in business. However, the decline of the typical one and two-screen theaters was a trend that the laws could not reverse. All theater owners were initially affected by the scarcity of new releases and the concentration of blockbuster films into a few peak periods. At the time the laws were being passed, the industry was experiencing dramatic changes that eventually made the laws counterproductive. The studios were able to stimulate demand through the production of event films where the top twenty films in any given year produced at least half of the box office gross. Theater owners that remained competitive converted theaters to the multiplex concept in order to have a greater likelihood of exhibiting blockbuster films and diversifying risk.

In addition, studios changed their philosophy on the release pattern of films. Prior to the passage of the laws, films followed a slow release pattern where only a handful of theaters exhibited a new release in a limited number of cities during their first-run. However, over time studios changed their distribution strategy to a fast release pattern, making first-run films more widely available upon their initial release. Through the development of the ancillary markets, cable television and VCRs, the decades long product shortage came to an end. By the early 1980's new releases were consistently double their previous levels of the early blind bidding years.

The econometric results that we present in this paper suggest that even the strictest state laws had at most a limited and short-lived impact on theater survival. Our results are in the spirit of those found by Sutton (1991) for a number of other similarly highly concentrated but competitive industries, because theater owners reacted to the change in the distribution pattern of new films by investing endogenously in quality (that is, number of screens). Moviegoers were better off in terms of quality, because a wider selection of films were present in one location.[21]

In addition, we find some evidence that the laws increased admission prices for the relatively more successful films giving support to the argument that blind bidding actually benefited those theater owners who diversified to spread risk while paying lower guarantees

and bid prices per film. The laws actually offset some of this advantage, since banning blind

bidding resulted in higher bid prices for the most promising films that these theater owners

would have shown anyways. As a result, one could argue that the laws were an unnecessary

attempt to protect less efficient theaters from going out of business while penalizing those

theater owners who modernized by improving the quality of their theaters.

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[21] Recently, Ellickson (2007) provides similar evidence for endogenous investments in supermarket quality. Consumers experience a higher level of quality as supermarkets offer a wider selection of products in larger stores.

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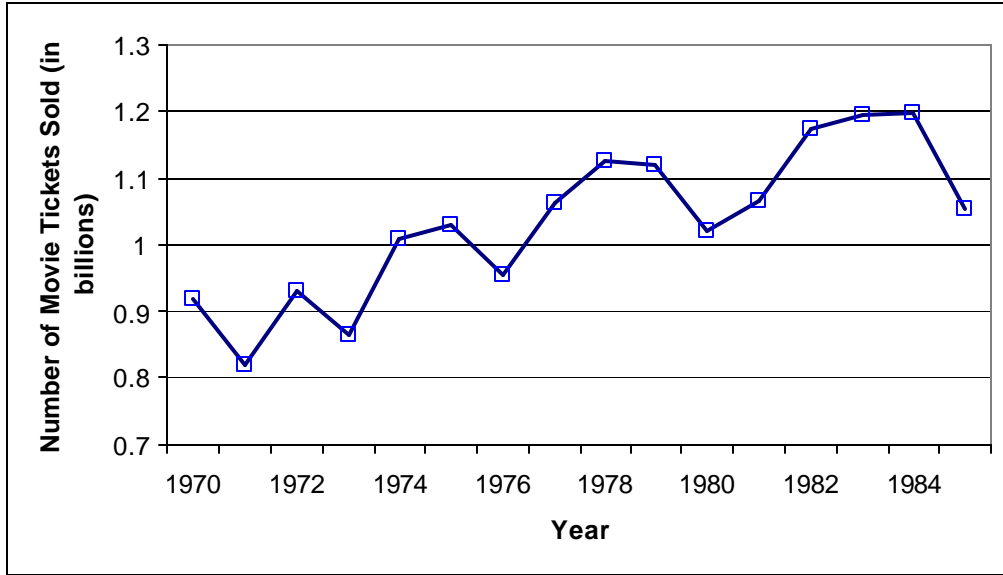
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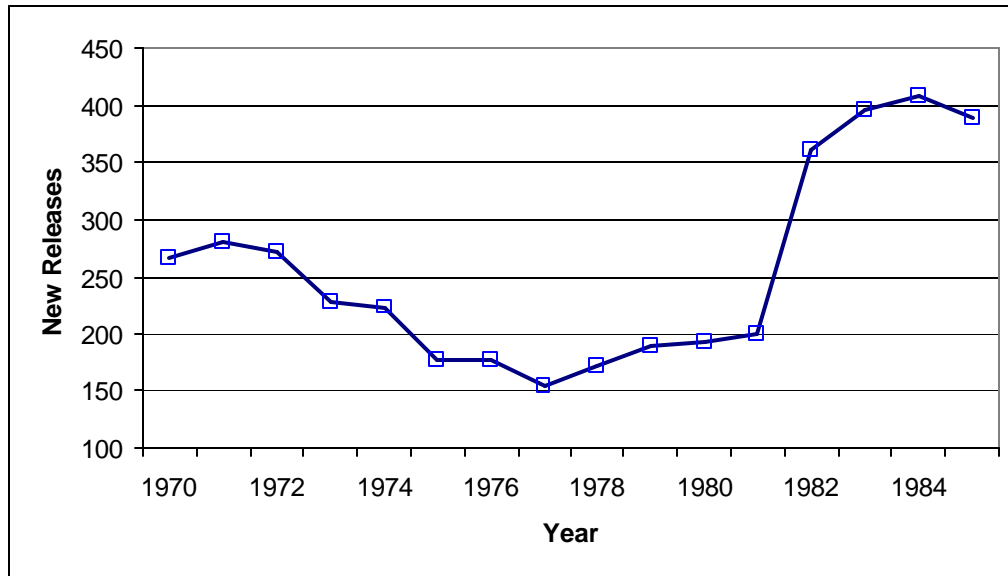
Figure 1

Number of Movie Tickets Sold, 1970-1985

Source: Encyclopedia of Exhibition (National Association of Theater Owners: annual)

Figure 2

Number of New Releases from U.S. Movie Studios, 1970-1985

Source: Encyclopedia of Exhibition (National Association of Theater Owners: annual)

Table 1

States that Enacted Laws Banning Blind Bidding

State	Year Enacted	Guarantees Permitted
Alabama	1978	Yes
Arkansas	1981	Yes
Georgia	1979	Yes
Idaho	1979	No
Indiana	1980	Yes
Kansas	1981	Yes
Kentucky	1980	No
Louisiana	1978	Yes
Maine	1979	Yes
Massachusetts	1979	Yes
Missouri	1982	Yes
Montana	1981	No
New Mexico	1979	Yes
North Carolina	1979	Yes
Ohio	1978	No
Oregon	1979	Yes
Pennsylvania	1980	No
South Carolina	1978	Yes
Tennessee	1979	Yes
Utah	1979	No
Virginia	1978	Yes
Washington	1979	Yes
West Virginia	1979	Yes
Wisconsin	1984	No

Source: Encyclopedia of Exhibition (National Association of Theater Owners: annual)

Figure 3

Aggregate Number of U.S. Theater Screens from 1970 to 1985
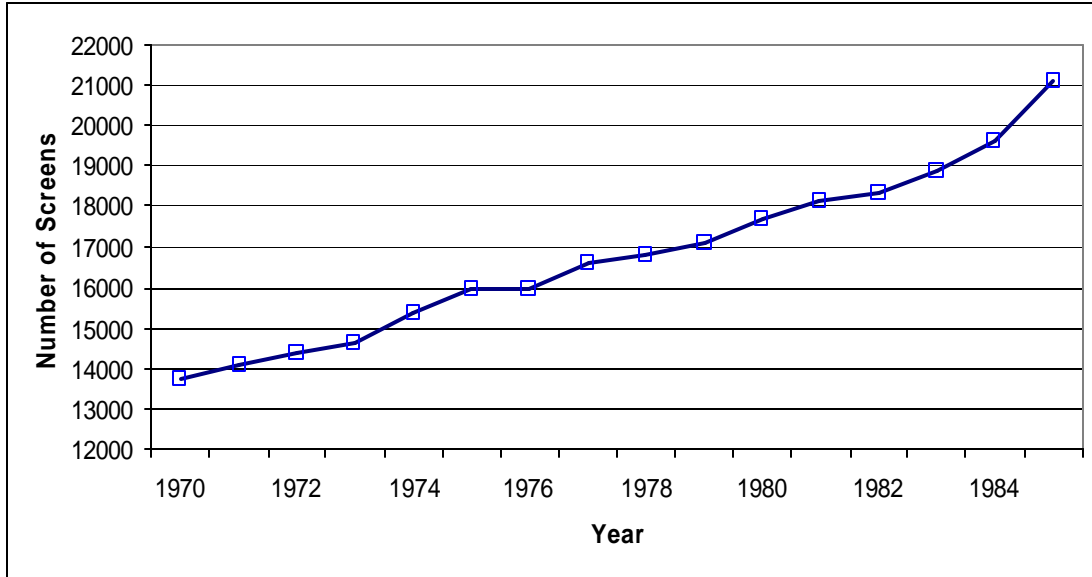
Table 2

Probit Estimates (Florida, Georgia, North Carolina and Tennessee) 1977-1981

Variable	Coefficient (standard errors) [marginal effects]	Mean Standard deviation Minimum Maximum
Constant Term	0.23 (0.24) [0.08]	
Number of Screens	-0.43* (0.10) [-0.15]	2.03 1.26 1.0 9.0
Herfindahl-Hirschman Index	-0.13 E-4 (0.10 E-3) [-0.48 E-5]	1484.7 925.5 724.0 5612.2
Number of Screens a Theater Owner Operates	0.31 E-3 (0.10 E-3) [0.11 E-3]	157.8 169.9 1.0 25
Preview State	0.27 (0.19) [0.09]	0.48 0.50 0.0 1.0
Log L	-133.41	
Cases	228	

* Significant at the 5 percent level.
** Significant at the 10 percent level.

Table 3

Probit Estimates (Michigan, New York, Ohio, and Pennsylvania)
1977-1981

Variable	Coefficient (standard errors) [marginal effects]	Mean Standard deviation Minimum Maximum
Constant Term	0.22 (0.14) [0.07]	
Number of Screens	-0.43* (0.07) [-0.13]	1.54 0.99 1.00 8.00
Herfindahl-Hirschman Index	-0.20 E-4 (0.53 E-4) [-0.66 E-5]	1929.1 1081.4 895.6 5410.2
Number of Screens a Theater Owner Operates	-0.67 E-3 (0.42 E-3) [-0.21 E-3]	93.3 140.7 1.0 525
Preview State	-0.23* (0.11) [-0.07]	0.56 0.49 0.00 1.00
Log L	-411.46	
Cases	750	

* Significant at the 5 percent level.
** Significant at the 10 percent level.

Table 4

Duration Model Estimates of Movie Theater Survival
Ohio, Michigan, Pennsylvania and New York, 1977-1985

|	Ohio, Michigan, and New York		Pennsylvania, Michigan, and New York		All Four States
Constant	-3.0* (0.30)	-3.7* (0.25)	-3.1* (0.27)	-3.5* (0.25)	-3.9* (0.19)
Number of Screens	0.17* (0.027)	0.15* (0.023)	0.19* (0.027)	0.17* (0.025)	0.15* (0.019)
Entry Rate	-0.32 (0.35)	-0.46 (0.31)	0.15 (0.35)	0.18 (0.32)	-0.27 (0.25)
Number of New Releases	0.0029* (0.0002)	0.0038* (0.0002)	0.0030* (0.0002)	0.0034* (0.0002)	0.0038* (0.0001)
Number of Tickets Sold	3.47* (0.29)	3.94* (0.25)	3.49* (0.26)	3.81* (0.24)	4.12* (0.19)
Preview State	0.11* (0.045)	0.2* (0.051)	0.15* (0.05)	0.25* (0.057)	0.25* (0.036)
Preview x Years 1982-1985		-0.49* (0.072)		-0.29* (0.072)	-0.40* (0.048)
Sigma	0.33* (0.032)	0.29* (0.026)	0.29* (0.025)	0.26* (0.023)	0.26* (0.019)
Log L	-975	-951	-877	-870	-1254
Cases	3453	3453	3447	3447	4860

Standard Errors are in parentheses.

* Significant at the 5 percent level.

** Significant at the 10 percent level.

Figure 4

Average Movie Theater Admission Prices, Cleveland and Detroit 1975-1981
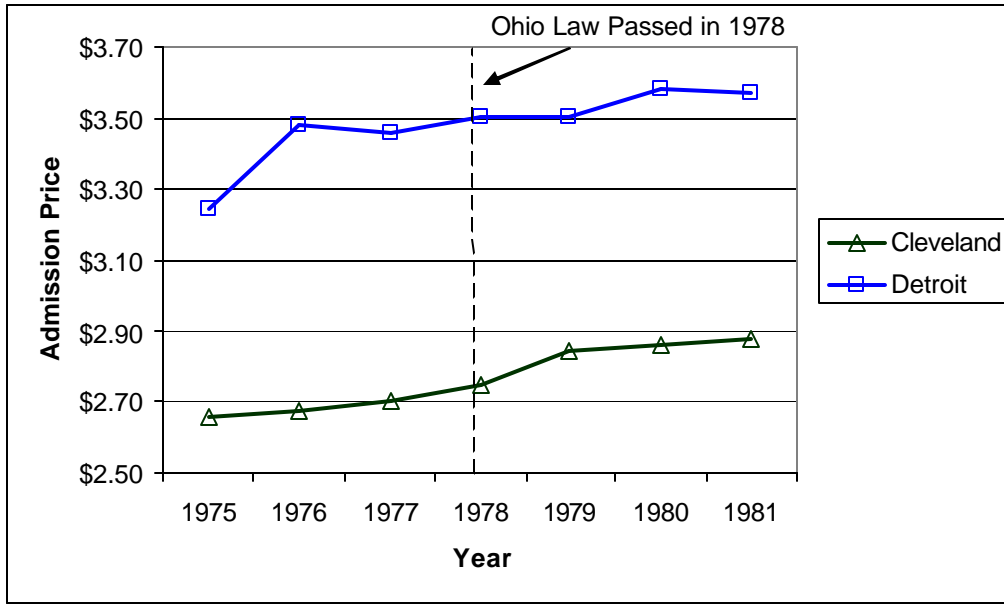
Table 5

Average Admission Price Before and After Passage of the Ohio Law

| Variable	Cleveland (1)	Detroit (2)	(1) – (2)
Mean Price before (1976-77)	2.69 (0.364)	3.47 (0.187)	
Mean Price after (1979-80)	2.85 (0.451)	3.54 (0.101)	
Change in Mean Price	0.16* (0.048)	0.07* (0.019)	0.09* (0.004)
Mean Price before (1975-76)	2.67 (0.345)	3.36 (0.251)	
Mean Price after (1980-81)	2.87 (0.428)	3.57 (0.330)	
Change in Mean Price	0.20* (0.046)	0.21* (0.040)	-0.01** (0.005)

Standard Errors are in parentheses.
* Significant at the 5 percent level.
** Significant at the 10 percent level

Figure 5

Average Movie Theater Admission Prices, Philadelphia & Pittsburgh and Detroit, 1978-1983
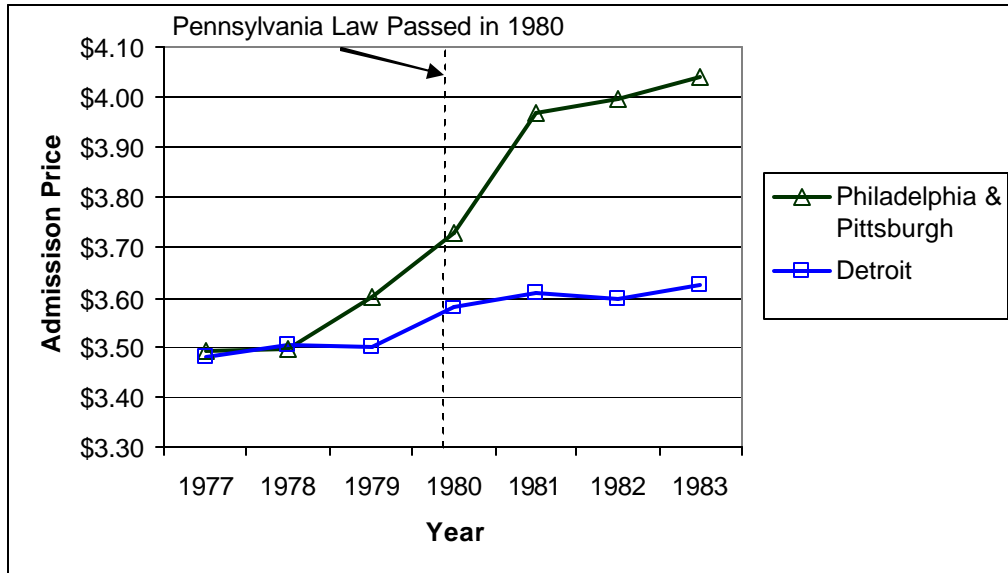
Table 6

Average Admission Price
Before and After Passage of the Pennsylvania Law

Variable	Philadelphia and Pittsburgh (1)	Detroit (2)	(1) – (2)
Mean Price before (1978-79)	3.55 (0.109)	3.50 (0.024)	
Mean Price after (1981-82)	3.98 (0.073)	3.61 (0.202)	
Change in Mean Price	0.43* (0.008)	0.11* (0.021)	0.32* (0.002)
Mean Price before (1977-78)	3.49 (0.068)	3.48 (0.171)	
Mean Price after (1982-1983)	4.02 (0.092)	3.61 (0.152)	
Change in Mean Price	0.53* (0.008)	0.13* (0.023)	0.53* (0.002)

Standard Errors are in parentheses.

* Significant at the 5 percent level.

** Significant at the 10 percent level