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MEMORANDUM

DATE: November 21, 2003
TO: Chairman and Members, Legislative Commission's Subcommittee to Study the Allocation of Limousines (A.B. 518)
FROM: Brian Davie, Legislative Services Officer 
SUBJECT: Summary of Study on Taxicab Regulation

This memorandum provides a summary of the attached study entitled "Analysis of Taxicab Deregulation & Re-Regulation" dated November 8, 1993. Ambassador Limousine of Las Vegas provided the study to the committee.

Price Waterhouse prepared the study on behalf of the International Taxicab Foundation to analyze and document the experiences with deregulation of 21 cities. These cities had deregulated taxi services prior to 1983, and the report indicates that no major cities are known to have deregulated taxi services between that time and completion of the study. The purpose of the study was to describe changes in regulatory practices that followed deregulation, and to explore the comparative effects of deregulation over the long term.

The Price Waterhouse report concludes that the effects of taxi deregulation have ranged from benign to adverse, depending on local conditions and markets. It points out that there appears to be scant evidence that deregulation fully achieved the goals on which its implementation was premised, though some goals—such as more taxis and less regulatory involvement by government—were achieved. Market imperfections peculiar to the taxicab industry, including unusual product supply (such as first-in, first-out queues at cabstands) and poor availability of information on price and quality, tend to negate the consumer benefits typically associated with deregulation in other industries.

Please let me know if you need any further information.

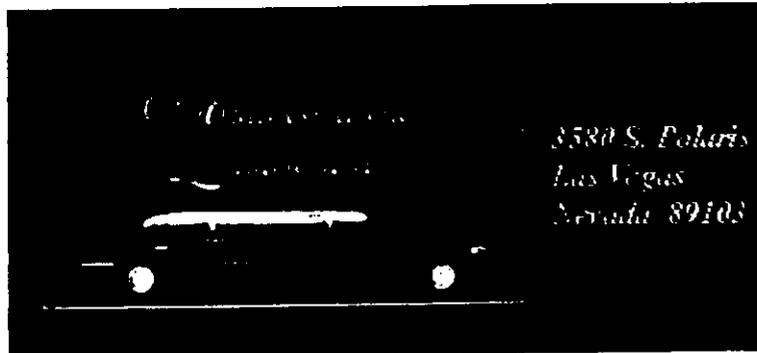
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EXHIBIT ___ Limo	Document consists of <u>26</u> pages
<input checked="" type="checkbox"/> Entire document provided.	
<input type="checkbox"/> Due to size limitations, pages ___ through ___ provided.	
A copy of the complete document is available through the Research Library (775-684-6827 or e-mail library@lcb.state.nv.us).	
Meeting Date <u>11/24/03</u>	

Analysis of Taxicab Deregulation & Re-Regulation

Prepared for the
International Taxicab Foundation
3849 Farragut Avenue
Kensington, Maryland 20895

Prepared by
Price Waterhouse
Office of Government Services
Washington, DC



November 8, 1993

25 for ITF & ITLA Members
50 for Non-Members

International Taxicab Foundation

Price Waterhouse



8 November, 1993

Mr. Alfred LaGasse
Executive Vice President
International Taxicab Foundation
3849 Farragut Avenue
Kensington, MD 20895

Dear Mr. LaGasse:

We are pleased to submit this final report documenting our findings from an analysis of taxicab regulation and re-regulation that we performed on behalf of the International Taxicab Foundation.

Our findings rest on research methods described in Section 1 of the report, which rely on three data sources: (i) past case studies of taxi deregulation, sponsored by the U.S. Department of Transportation; (ii) taxi fare and license data for individual cities, made available by the International Taxicab and Livery Association; and (iii) telephone surveys of public officials in cities that implemented taxicab deregulation, conducted by Price Waterhouse. Price Waterhouse has not independently audited data from the first two sources, although we have no reason to believe the data have any characteristics that would invalidate our findings.

Our report concludes that the effects of taxi deregulation have ranged from benign to adverse, depending on local markets and conditions. This is a departure from the experience with deregulation in other industries and is influenced by taxi market imperfections that reduce or remove incentives for price and service quality competition. Consequently, we found that most cities that had fully deregulated taxi service have since reverted to some form of control over market entry.

We very much appreciate the assistance provided by you and other members of ITF during this engagement.

Very truly yours,

Price Waterhouse

Analysis of Taxicab Deregulation and Re-Regulation in US Cities

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EXECUTIVE SUMMARY

Taxicab regulation and deregulation refer to opposite ends of a spectrum of government control over taxi services. *Regulation* typically implies government determination of service supply (by limiting taxi licenses), or prices (by setting fixed or maximum fares), or both. *Deregulation*, in contrast, typically implies an absence of government control. Although regulatory choice is not limited to these two extremes, philosophical support for one or the other tends to be the driving force behind changes in public policy.

Since the late 1970s, local governments and the taxi industry have engaged in periodic debate regarding the merits of taxi deregulation. These debates were initially influenced by the deregulation of other prominent industries - airlines, trucking, and telecommunications to name a few. Proponents of taxi deregulation cited several kinds of consumer benefits that were experienced with these other deregulation efforts. These benefits were believed to include more taxi service and faster response times, lower fares, service innovations, and service expansion to under-served neighborhoods. Proponents of taxi regulation argued, in counterpoint, that deregulation would result in poorer service, less safety, less accountability, and less reliability. Because most taxi services in the US were regulated at the time these debates first occurred, there was little empirical evidence to support either argument.

The International Taxicab Foundation engaged Price Waterhouse to analyze and document the experiences with deregulation over the last ten years. Twenty-one cities deregulated taxi services prior to 1983, though no major cities are known to have deregulated since. The short-term effects of deregulation were previously documented in a series of case studies¹ sponsored by the US Department of Transportation, published in 1983 and 1984. The purpose of this report is to add to the record by describing changes in regulatory practices that followed deregulation, and to explore the comparative effects of deregulation over the long term.

It is important for readers to note that Price Waterhouse does not advocate either deregulation or regulation of taxi services. Rather, our purpose is to clarify and compare the effects of deregulation as experienced in a number of metropolitan areas in the US. We trust that this objective rendering of the available facts will assist public decision-makers in their deliberation of the taxi industry regulatory structure.

Short-Term Effects of Deregulation

Deregulation introduced several immediate changes in taxi supply, price, and service quality in the six cities for which detailed case study information is available (see citation above). The experience of these cities generally indicates that the benefits of deregulation were devalued by unanticipated and unattractive side effects:

- *Although the supply of taxi services expanded dramatically, only marginal service improvements were experienced by consumers.* Within a year of deregulation, the supply of taxi services increased an average of 23%. Because most new entrants were independent operators and small fleet owners with limited

¹ Berkeley, Oakland, Phoenix, Portland, San Diego, and Seattle.

capability to serve the telephone-based market, most new service was concentrated at already well-served locations - such as airports and major cabstands. Customer wait times at these locations, already short, were reduced further. Response times in the telephone market were similar to pre-deregulation performance. Trip refusals and no-shows, however, increased significantly.

- *Prices rose in every instance.* Paradoxically, the influx of new entrants did not invoke the price competition typically experienced in other newly-deregulated industries. Prices rose an average of 29% in the year following deregulation. There appear to be two sources of this unexpected event. First, fare increases prior to deregulation had consistently lagged cost increases. Veteran operators thus corrected prices at the first opportunity. Second, new entrants generally charged higher fares than the veteran operators. The cabstand markets on which these operators focused their services are generally price insensitive and, because of the first-in first-out nature of taxi queues, comparison shopping is discouraged. For these reasons, the new entrants had no incentive to introduce price competition.
- *Service quality declined.* Trip refusals, a decline in vehicle age and condition, and aggressive passenger solicitation associated with an over-supply of taxis are characteristic of a worsening in service quality following deregulation.

The negative aspects of deregulation were especially evident at airports and major tourist attractions. As a result, deregulation often acquired the enmity of the business community and adverse media coverage. These effects were most closely associated with cities that implemented an "open entry" policy that enabled an influx of independent owner-operators that were unaffiliated with companies or taxi cooperatives.

The short-term effects of deregulation were less adverse in smaller cities which have an insignificant cabstand market. The telephone-based market, which dominates the smaller cities, is difficult for independent operators to serve effectively. These cities thus avoided the structural changes to the industry that contributed to the problems in larger cities noted above.

Post-Deregulation Changes in Regulatory Practices

All post-deregulation changes in regulatory practices were limited to cities that had implemented a "fully deregulated" system, wherein both market entry and fares were left to the industry's discretion². Other cities which had only partially deregulated - for example, through the use of minimum standards for market entry or by relaxing government involvement in fares - reported no changes in regulatory structure.

Nine of the thirteen cities that had deregulated via "open entry" chose to revert to a regulated system, either in whole or in part, by 1992. Six cities returned to a fully-regulated structure, in which the local government limits market entry and sets a fixed or maximum fare. Two other cities implemented regulations for airport-based service. These eight cities were the

² see Section 1 of this report for a definition of the taxi regulatory structure.

largest of those that had initially deregulated, and had the most intensive airport activity. One other city reverted to a minimum standards approach.

Only four of the 21 cities continue to employ a fully-deregulated system. These are among the smallest cities in the group. Related to the size of these cities is the absence of major structural changes in the industry that precipitated re-regulation in the larger cities.

Long-Term Effects of Deregulation

Long-term price performance in deregulated cities is similar to that of regulated cities, based on price information submitted annually by members of the International Taxicab and Livery Association (ITLA). Between 1985 and 1992, the median fare³ for a five-mile trip rose by 6.5% (\$0.50) in deregulated cities versus 4.8% (\$0.33) in a sample of regulated cities (see appendix B for details). Fares in cities which re-regulated their taxi services rose by only 2% (\$0.17) during this period, a reaction to the high rate of fare growth following deregulation. These results indicate that deregulation, over the long term, has contributed to neither higher nor lower fares than experienced by the industry generally.

Other long-term effects of deregulation are difficult to discern. Taxi supply (i.e., taxis per 1,000 population) in deregulated cities stabilized after the short-term increases noted above, and appears to be lower and more variable than in regulated or re-regulated cities. Very little data is available to support long-term evaluation of service quality. These types of data are rarely collected even in regulated cities, and are especially scarce in deregulated cities.

* * * * *

In retrospect, the effects of taxi deregulation have ranged from benign to adverse, depending on local conditions and markets. There appears to be scant evidence that deregulation fully achieved the goals on which its implementation was premised, though some goals clearly were achieved (e.g., more taxis, less regulatory involvement by government). Market imperfections peculiar to the taxi industry, including unusual product supply (e.g., first-in, first-out queues at cabstands) and poor availability of information on price and quality, tend to negate the consumer benefits typically associated with deregulation in other industries. It is perhaps noteworthy that no major US cities have deregulated taxi services since the early 1980s.

³ In constant 1992 dollars.

1. FRAMEWORK

A wave of deregulation occurred in the taxicab industry during the late 1970s and early 1980s, involving 21 cities across the U.S. Since that time, most deregulated cities experienced unfavorable results and opted to re-regulate, while the remainder have for various reasons remained deregulated. The purpose of this report is to document the experience of each, and to explain the circumstances which led to these different outcomes.

This section of the report introduces the terminology used to describe taxi regulation, and provides an overview of the methods used to compile the record on deregulation.

Regulation, Deregulation, and Re-Regulation

Taxicab regulation and deregulation refer to opposite ends of a spectrum of government control over taxi services. *Regulation* typically implies government determination of service supply (by limiting taxi licenses), or prices (by setting fixed or maximum fares), or both. *Deregulation*, in contrast, typically implies an absence of government control. *Re-regulation* refers to a tightening of government control over service supply and/or prices, following a period of relaxation of controls.

The matrix below illustrates the two basic dimensions of the regulatory structure: market entry mechanisms and fare-setting mechanisms. Market entry mechanisms, shown in the left-most column, range from most restrictive (predetermined ceiling) to least restrictive (open entry). Fare-setting mechanisms, shown in the top-most row, range from most restrictive (regulator defines all fares) to least restrictive (individual operators define fares). Full regulation and full deregulation refer to opposite corners of this matrix, as shown. Between these two extremes lie hybrid approaches by which government may control some aspects of taxi service that are of concern to local interests.

Market Entry Mechanisms	Fare-Setting Mechanisms		
	Regulator Defines All Fares	Regulator Defines Minimum or Maximum Fares	Individual Operators Define Fares
Predetermined Ceiling	<p>Regulated: typically means that both market entry and fares are specified by regulators.</p> <p>In fact, deregulation or re-regulation can occupy a wide range of middle ground.</p> <p>De-Regulated: typically means that market entry and fares are unrestricted.</p>		
Population Ratio			
Convenience & Necessity			
Franchise System			
Minimum Standards			
Open Entry			

Definitions for the types of market entry mechanisms⁴, in order of decreasing government control, are as follows:

- **Predetermined ceiling.** The city limits the number of taxicabs in operation, typically by issuing a fixed number of taxicab permits. If demand for taxicab service exceeds the ceiling, this is effectively a closed entry policy.
- **Population ratio.** The number of taxicabs in operation is set as a function of population (e.g., 0.75 cabs per 1,000). The ratio allows the number of permits to vary with demand.
- **Convenience and necessity.** New permits may be issued under certain conditions. A wide range of criteria fall into this category, usually relevant to demand and the need for additional service.
- **Franchise system.** This system involves granting specific companies the right to operate taxicabs. Its effect may range from closed entry to open entry, depending on the requirements for entry of new companies and the ability of existing companies to increase the number of cabs.
- **Minimum standards.** Cabs are allowed to operate as long as they satisfy certain minimum standards. These standards differ from convenience and necessity in that they are unrelated to demand. The standards may include one or more of these factors: a minimum number of vehicles, radio dispatch capability, 24 hour service, or a vehicle age limit. These regulations limit supply by raising the cost of market entry.
- **Open entry.** Under open entry, almost anyone who owns an operable vehicle can obtain a taxi permit and provide service. There are still requirements under open entry, such as insurance or absence of a criminal record, but these are less restrictive than is the case for minimum standards.

The last two mechanisms - minimum standards and open entry - are most closely associated with deregulation. These mechanisms remove the regulatory body from decisions regarding taxicab supply, relying on market forces to establish an equilibrium. Minimum standards, however, can be used to influence the type of new entrants to the market, and thus the quality and stability of service.

Fare-setting mechanisms form the second dimension of the regulatory matrix. Definitions of these mechanisms are as follows:

- **Government-set fares.** The local government sets the fare that operators may charge. The rationale is that taxicab service is a public utility, and the public must be protected from unreasonable rates.

⁴ Definitions were drawn from: Urban Mass Transportation Administration, *Taxicab Regulation in US Cities: Volume 1 (Final Report)*; October 1983.

- **Minimum and/or maximum fares.** The local government sets a fare ceiling or a floor, and taxicab operators may charge any fare in the allowable range. The minimum or maximum fare may be set precisely by the regulator, or defined as a function of the average or median fare across all operators. It thus allows some amount of price competition.
- **Industry-set fares.** Fares are left up to the discretion of each operator. Often, operators must still file their rates, and the government may limit the number of rate changes per year.

Of these, industry-set fares are most closely associated with deregulation. This removes the regulator from making decisions not only about fares, but also other factors that influence the specification of an acceptable fare, such as productivity and profitability.

Research Methods

The information presented in this report was compiled via the following methods:

- **Literature review:** All references in this report to the short-term impacts of deregulation were drawn from previous studies of taxicab deregulation. Most of these studies were published between 1982 and 1984, and were sponsored by USDOT/UMTA's Service and Management Demonstration (SMD) Program. Other sources were used as well. A bibliography follows the appendices at the end of this report.
- **Telephone surveys:** Phone interviews were conducted with regulators or other city administrative staff in the 21 cities that pursued some form of deregulation. The primary purpose of these interviews was to verify the current regulatory structure, and factors contributing to regulatory change. A limitation of this method is that the deregulations occurred nearly ten years ago, generally exceeding the institutional memory and file retention of city regulatory agencies. A summary of current and historical regulatory changes for these cities is provided in Appendix A.
- **International Taxicab & Livery Association (ITLA) statistics:** Statistics on price and supply for the years 1985 and 1992 were abstracted from the *Taxicab Fact Book*, as reported by ITLA members. These post-deregulation statistics were used to determine the longer-term impacts on price and supply, and to compare the experience of regulated and deregulated cities. Price Waterhouse did not independently verify this information. A table of price and supply statistics referenced in this report is presented in Appendix B.
- **Case studies:** On-site interviews were conducted in San Diego, Seattle, and Phoenix to collect additional information on the transition to and from deregulation.

Information on service quality also was sought but found to be generally unavailable. Consequently, only the short-term impacts on service quality, from the USDOT/UMTA studies, are referenced herein.

2. TAXI REGULATION

Regulations governing the taxicab industry have been in place since the beginning of taxicab service. The most active period for new taxicab regulation in the US occurred during the late 1920s and early 1930s, when the Depression caused extremely competitive conditions, and growing urban centers invariably experienced problems with taxicab service. A *Washington Post* article from 1933, entitled "Taxicab Chaos," effectively conveys the initial desire for taxicab regulations:

Taxicabs are literally running wild on Washington streets, with almost complete lack of supervision or control. Public safety, reasonable working regulations, and equitable rates are almost completely disregarded...Hundreds of inexperienced drivers rent cabs and offer their services to the public. One driver who was recently observed proceeding down Pennsylvania Avenue like a derelict confessed that he had not driven a car for seven or eight years.

A central feature of taxicab service is the potentially low cost of market entry. A serviceable vehicle and a licensed driver are the minimum requirements to start a taxicab operation. In an unregulated environment, the low cost of entry attracts individuals who have limited employment options. Thus, during periods of high unemployment, independent taxi operators flood the market. Conditions such as these during the Depression led cities to regulate taxi services. Once this practice was established, it tended to spread to other cities as a precedent for protecting the public interest.

Accordingly, restriction of market entry is the central feature of the taxi regulatory structure. Three arguments are traditionally cited by the taxi industry in favor of regulating market entry⁵:

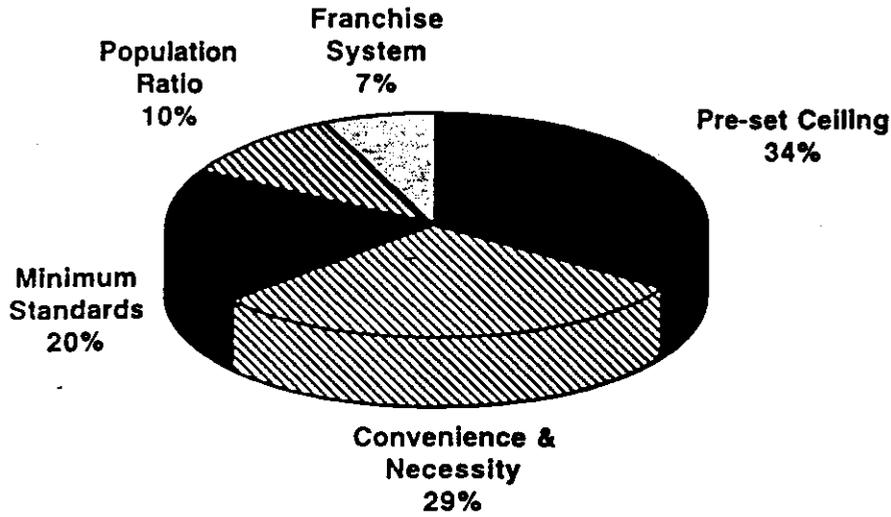
- "natural monopoly" - one firm can provide services at least cost
- "destructive competition" - too many competitors yield insufficient profits and cause declines in safety and service.
- "cross subsidy" - profits in lucrative markets are needed to subsidize service in unprofitable markets.

A 1983 study estimated that 80% of cities limited market entry, and 77% regulated fares. The full distribution of regulatory practices is shown in the graph on the following page.

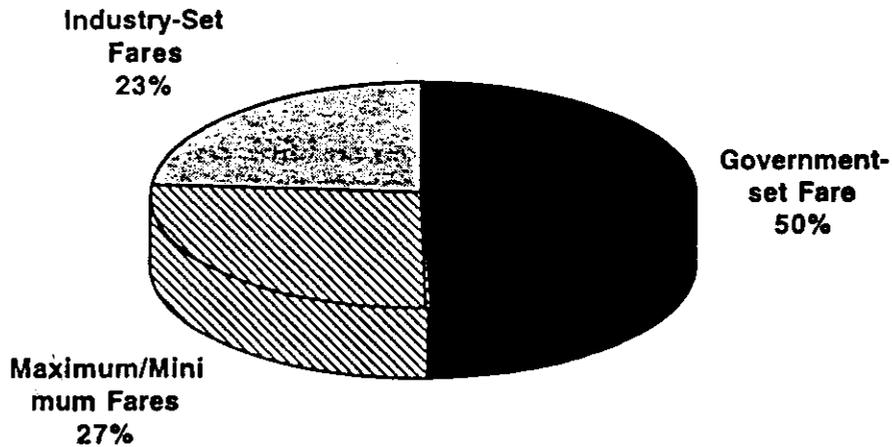
Most taxi regulations are effected by local jurisdictions (i.e., cities and counties). Only three states completely regulate taxis, and seven others exert partial control. The remaining states generally specify only minimum standards for safety, leaving fare and entry regulation to local governments.

⁵ From Teal, et al, *Urban Transportation Regulation in Arizona*, USDOT/UMTA, 1984.

Market Entry Mechanisms



Fare-Setting Mechanisms



Source: Shaw, Gilbert, et al, *Taxicab Regulations in US Cities*, USDOT/UMTA, 1983.

3. TAXI DEREGULATION AND RE-REGULATION

Through 1983, twenty-one US cities opted to deregulate taxi services to various degrees. In the past ten years, six of these cities reverted to a fully-regulated system, and another two cities regulated taxi services at airports. The cities which maintained a deregulated structure tended to have one of the following characteristics: (1) relatively smaller in population than the other cities; (2) less reliant on airport activity; or (3) had implemented other measures that raised the hurdles for market entry. Only four of the 21 cities continue to employ a fully-deregulated system today.

This section of the report describes why these twenty-one cities deregulated, the effects of deregulation, and changes in the regulatory structure following deregulation.

Why Cities Deregulated

Twenty-one US cities, principally in western and Sunbelt states, deregulated taxi services by 1983. Two cities - Atlanta and Indianapolis - deregulated in 1965 and 1973, respectively. The remaining nineteen cities deregulated between 1979 and 1983. Most of these cities moved from traditional regulatory structures to one of two forms of deregulated market entry: (1) open entry (13 cities); and (2) minimum standards (5 cities). Three other cities deregulated fares, but maintained controls over market entry. Graphics showing the locations and dates of these deregulations, and the changes in regulatory structure, are presented on the following page.

In telephone and on-site surveys of these cities, a free-market ideology was cited as the driving force behind deregulation, which held the following expectations:

- **Price.** Presuming that entry restrictions had enabled incumbent operators to charge higher fares than would prevail in a competitive market, proponents of deregulation expected new entrants to force a reduction in the prevailing rates. The positive license values in regulated cities were cited as evidence that the incumbent operators enjoyed some monopoly power.
- **Level of service.** As entry restrictions are lifted, deregulation proponents expected the number of cabs in service to increase. In theory, these additional cabs should reduce the wait times for street-hailed service and response times for telephone orders.
- **Quality of service.** Proponents of deregulation expected that the new competitiveness of the industry should cause operators to compete based on quality as well as price, resulting in improved service quality and the availability of new pricing and service options.
- **Administrative costs.** Proponents of deregulation expected that open entry would reduce government costs by eliminating permit processing efforts, and that costs would also be saved by eliminating rate change review.

While some of these benefits were realized through deregulation, other less attractive and unanticipated results occurred as well. In most cities, these outweighed the benefits and forced a reconsideration of full-scale deregulation.

Summary of Taxi Deregulation in the US

Location & Timing of Deregulations



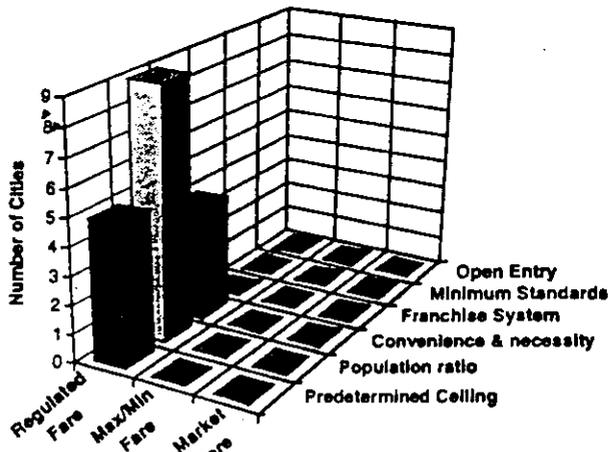
Seattle (1979)
Spokane (1980)
Tacoma (1981)
Portland (1979)
Sacramento (1982)
Oakland (1979)
Berkeley (1980)
Fresno (1979)
San Diego (1979)
Phoenix (1982)
Tucson (1982)

- ◆ Open Entry
- ❖ Minimum Standards
- Fares Only (restricted entry)

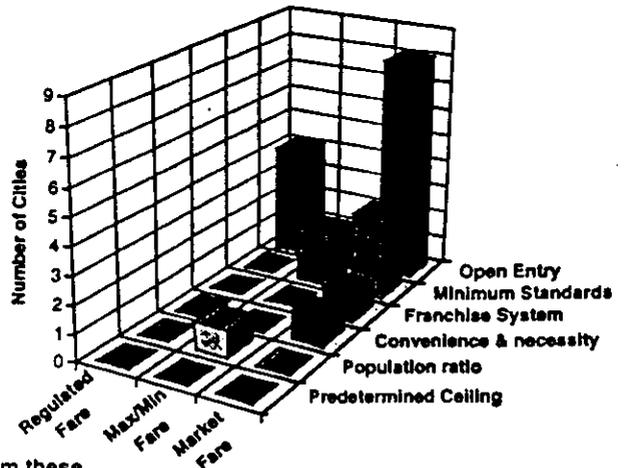
Madison (1979)
Milwaukee (1979)
Des Plaines, IL (1981)
Indianapolis (1973)
Springfield, OH (1981)
Kansas City (1983)
Charlotte (1982)
Atlanta (1965)
Jacksonville (1983)
Tampa (N/A)

Taxi Regulatory Structure: Pre- and Post-Deregulation

Pre-Deregulation



Post-Deregulation



note: 3 of the 21 cities are omitted from these graphs due to missing information on the pre-deregulation regulatory structure

Effects of Deregulation

The effects of deregulation varied by location. Cities which had a relatively large population, a high level of airport activity, and conditions conducive to low-cost market entry tended to have a negative experience with deregulation. As a result, these cities either fully or partially re-regulated taxi services (see "Post-Deregulation Changes in Regulatory Structure", following this section). Cities which did not possess the above characteristics, conversely, experienced no dramatic effects - either positive or negative - and have performed much like the rest of the industry over the long-term.

A summary of the effects of deregulation is presented below.

Price

Despite a large increase in service supply (see "Level of Service" on page 11), which in other industries has fostered price competition, prices rose following taxi deregulation in every documented case. The short-term changes in price were quite dramatic. In the long-run, however, prices in deregulated cities have performed similar to the industry as a whole. Please refer to the graphs on page 9 for a summary of short-term and long-term changes in price.

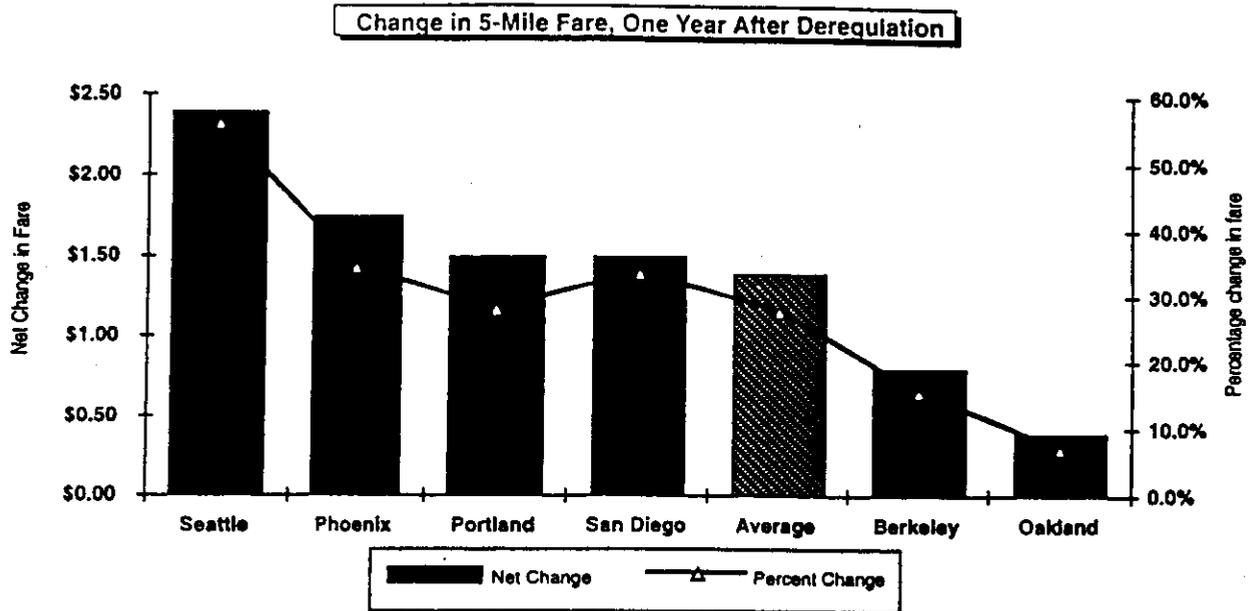
In the first year following deregulation, the average 5-mile fare rose by 29% (\$1.39) in the six cities documented in the USDOT case studies. This ranged from a high of 56% (\$2.40) in Seattle to a low of 7% (\$0.40) in Oakland. The price increases roughly reflect changes in industry structure, particularly an increase in independent and small-fleet operators (see "Level of Service", below). In Seattle and San Diego, these operators were observed to charge higher fares - sometimes substantially higher fares - than those charged by the larger, more-established companies. This can be seen in the graphs on page 10. A similar effect was noted⁶ in Phoenix, but price information by company size was not documented. In all three cities, independent and small-fleet operators focused their service on major cabstands and the airports. These are generally price-insensitive markets with little or no comparison shopping by prospective customers. This condition, along with the fact that these operators spent long wait times in the taxi queues, discouraged price competition on the part of new entrants.

In the long-term (i.e., 1985-1992), price trends in deregulated cities are similar to those in re-regulated cities and regulated cities (see bottom graph on page 9). The median fare⁷ for a five-mile trip rose by 6.5% (\$0.50) in deregulated cities versus 4.8% (\$0.33) in regulated cities. Fares in cities which re-regulated their taxi services rose by only 2% (\$0.17) during this period, a reaction to the high rate of fare growth during their deregulated period. These results indicate that deregulation, over the long term, has had little impact on fare growth relative to the rest of the industry.

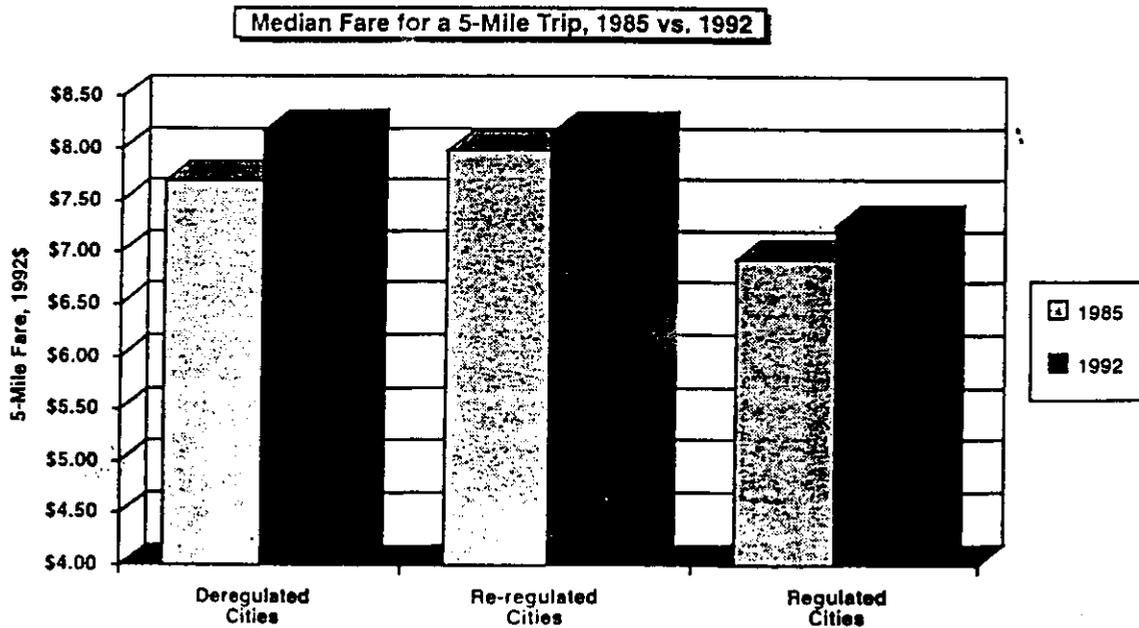
⁶ Teal, et al, Urban Transportation Deregulation in Arizona. USDOT, 1984, page 54.

⁷ In constant 1992 dollars.

Taxi Prices: Short-Term and Long-Term Trends



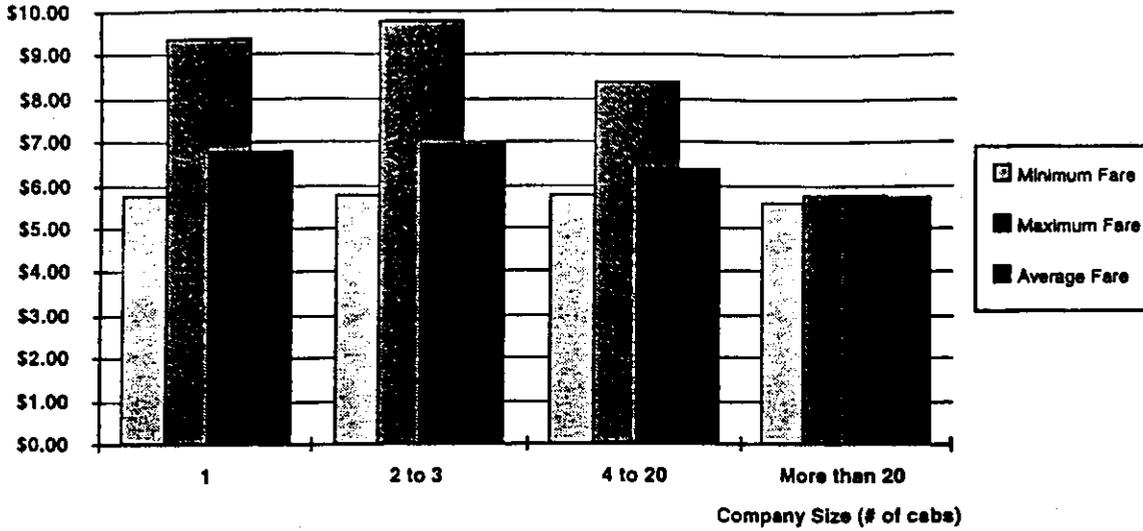
Source: USDOT case studies on the effects of taxi regulatory revision, 1983-1984.



Source: drawn from ITLA Taxicab Facts Book statistics (see Appendix B)

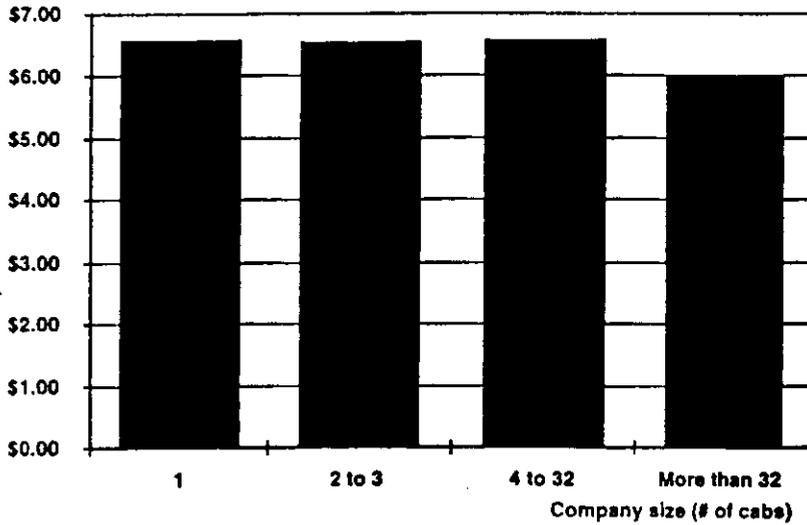
Fares for a 5-Mile Trip, by Company Size

Seattle, one year after deregulation



source: compiled by Price Waterhouse from taxicab rate data reported by the City of Seattle Department of Licenses and Consumer Affairs, June 1980.

San Diego, one year after deregulation



Source: USDOT, Effects of Regulatory Revision in San Diego, 1983.

Level of Service

Deregulation produced in most cases an immediate, large increase in the number of taxis. Because new entrants tended to congregate at already well-served locations, this large increase in supply did not produce corresponding improvements in customer service. In the long term, the level of service appears to have stabilized in deregulated cities. Data are insufficient, however, to comment on the long-term effects of taxi supply on service improvements.

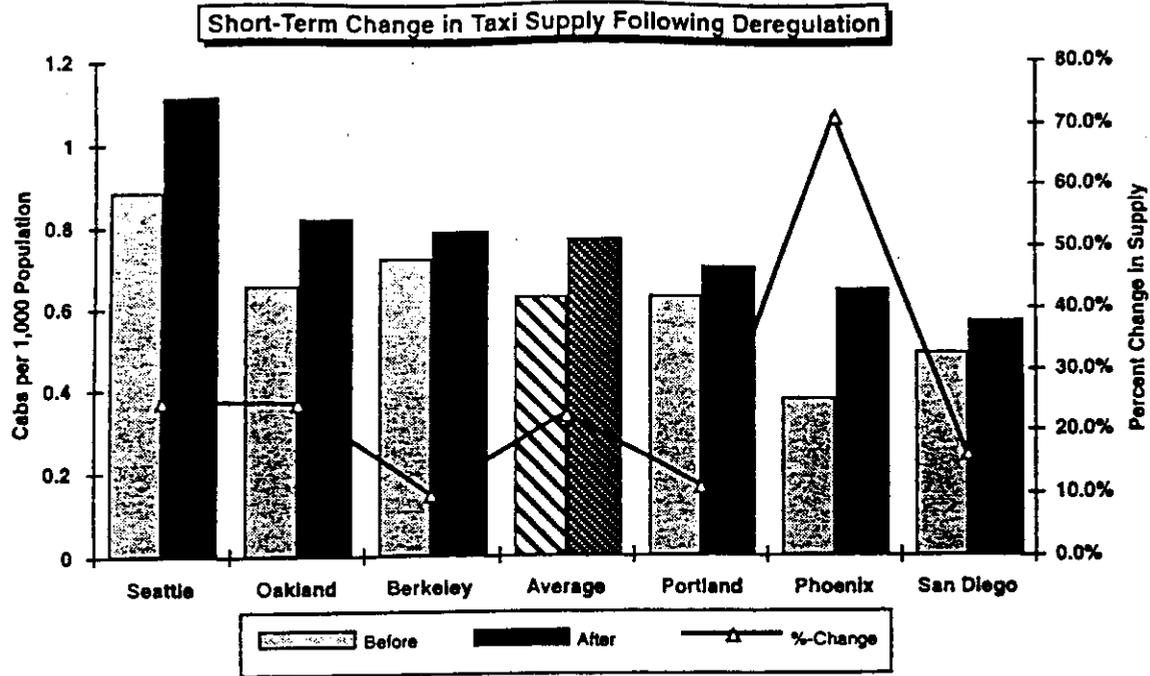
As noted in the graph (top) on the following page, the number of taxi operators immediately after deregulation increased by 23% on average, ranging from a high of 70% (Phoenix) to a low of 10% (Berkeley). The type of new entrants varied considerably among these cities (see bottom graph on following page). In Phoenix, San Diego, and Seattle, the percentage of cabs operated by independents and small-fleet owners grew while the percentage of large fleet operators declined. These operators focused their service on the airports and major cabstands. Consequently, Phoenix, San Diego, and Seattle experienced large fare increases that were in part attributable to small operators serving a price-insensitive market (see "Price", above). In Oakland, on the other hand, new large fleet owners entered the market, while in Berkeley there was little change. In contrast to the other cities above, Oakland and Berkeley experienced little change in fares.

Customer-oriented service improvements expected to occur with the large increase in supply were observed to be marginal. Focus of new entrants on the cabstand market, as noted earlier, reduced already-short wait times to almost zero. Response times for the telephone-based market were not consistently evaluated in the case studies, though the available data suggests that little change occurred. In the only data set containing before-and-after data (for San Diego)⁸ response times for all serviced calls were about the same after deregulation (13.6 minutes) as before (13.4 minutes). The rate of no-shows and trip cancellations, however, increased dramatically - from 2% of all calls to 18.2%. As shown in the graph on page 13, trip refusals and no-shows are most closely related to small fleets and independent operators. This was found to be true in both San Diego and Seattle.

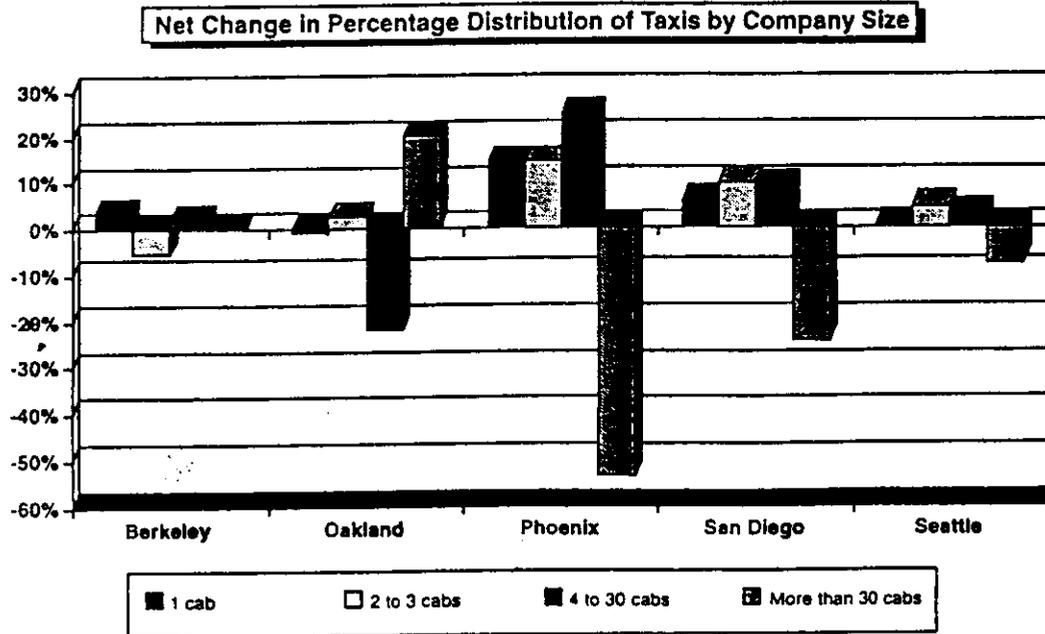
Long-term data for evaluating taxi supply and service improvements are sparse. Although taxi supply data was made available by the ITLA, geographic inconsistencies between taxi supply data and population tend to limit the validity of long-term comparisons to trends within classes of cities - deregulated, re-regulated and regulated (see graph on page 14). It is apparent that growth in taxi supply in currently-deregulated cities has stabilized. Meanwhile, taxi supply has declined relative to population in re-regulated and regulated cities. In re-regulated cities, this reflects a continuing correction to the rapid growth in taxi supply that occurred with deregulation (note: for a description of changes in regulatory structure by city, see "Post-Deregulation Regulatory Changes", below).

⁸ USDOT, *Effects of Regulatory Revision in San Diego*, 1983, Table B-9.

Changes in Taxi Supply & Industry Structure Following Deregulation

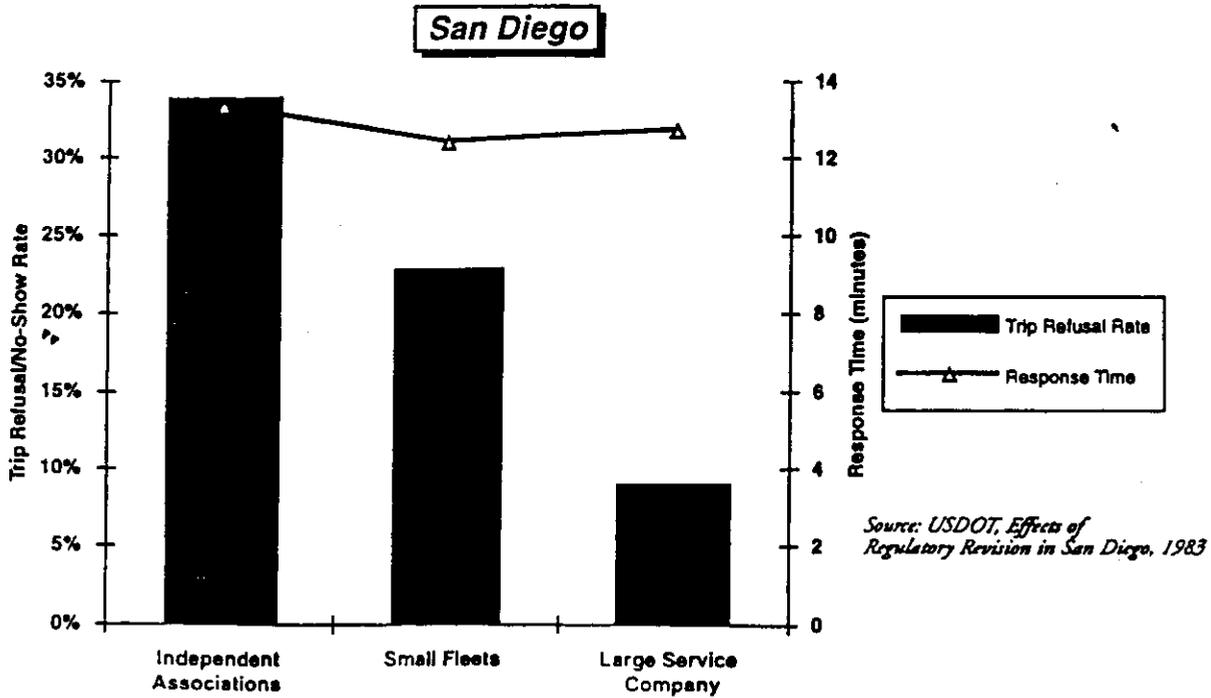
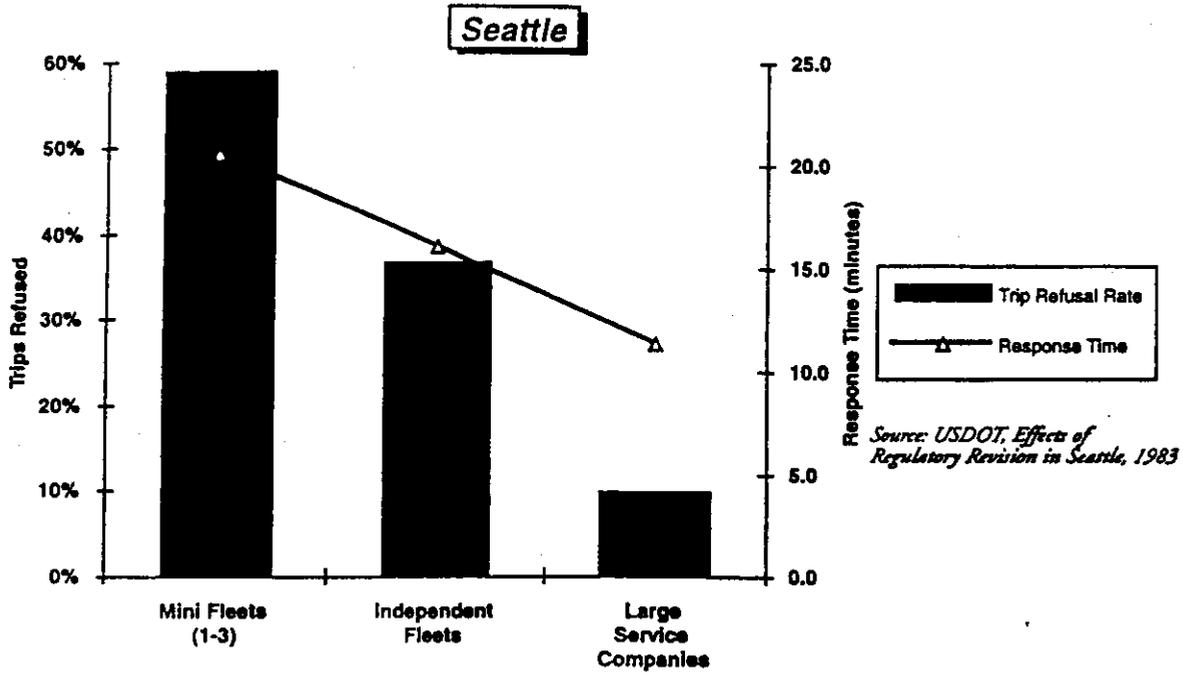


Source: USDOT/UMTA case studies on the effects of regulatory revision, 1983-1984

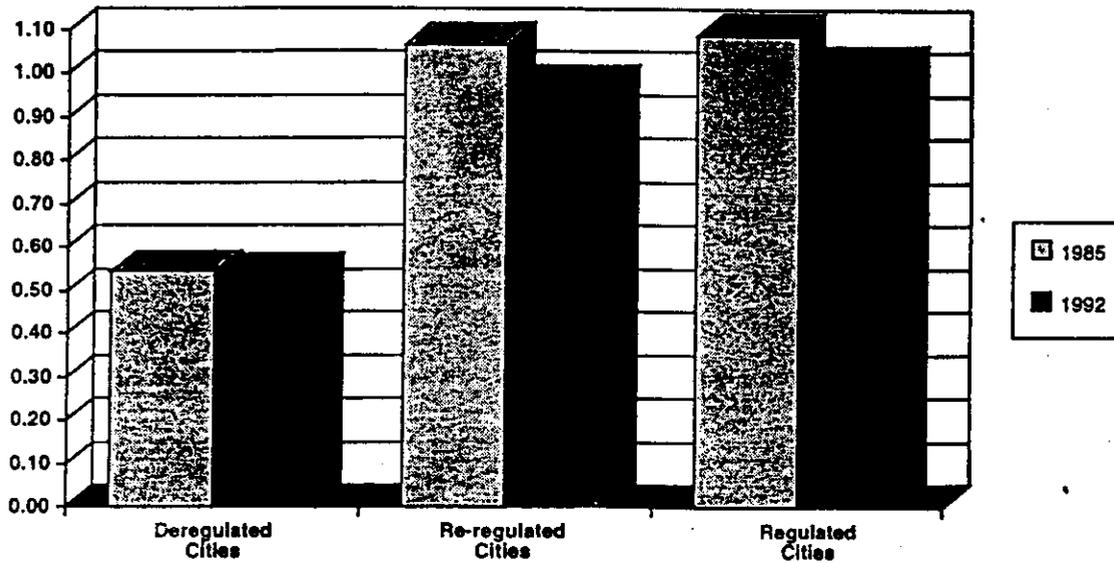


Source: USDOT/UMTA case studies on the effects of regulatory revision, 1983-1984

Response to Telephone-Based Service Requests After Deregulation



Taxis per 1,000 Population (median values)



Note: geographic inconsistencies between taxi supply and population data skew the cabs per 1,000 figure and thus comparisons across categories may not be accurate. The 1985-92 trends, however, should be valid.

Source: ITLA Taxicab Fact Book and US Census. See Appendix B for details.

Service Quality

The quality of taxi service is affected by several variables, including: (1) responsiveness to customers; (2) vehicle condition and cleanliness; and (3) driver behavior. The case studies of the effects of deregulation provide limited, but consistent, data on the first two of these variables. Information on driver behavior is referenced in the case studies, but is less rigorously measured.

As noted above in "Level of Service", the short-term effects of deregulation included a slight improvement in waiting times at cabstands, an insignificant change in response times to telephone-based service requests, and a significant increase in service refusals and no-shows. On balance, it can be said that deregulation provided marginal improvements in customer responsiveness, but only for those customers that taxi operators deemed to be high priority (as evidenced from the trip refusal rate).

The effect of deregulation on vehicle condition can be assessed by changes in vehicle age and inspection results. In San Diego, vehicles owned by new market entrants - generally independents and small fleet owners - were observed to be 7.1 years old on average, versus 2.9 years for the large service company that held most of the taxi licenses prior to deregulation (see graph on following page). Two years following deregulation, all fleets operated with yet older vehicles. In Seattle, the median vehicle age increased to 6 years old following deregulation from 4 years old prior to deregulation⁹. Further, vehicle inspection failures increased to 35% two years following deregulation from 20% the year prior to deregulation. Both cases suggest that a large influx of new entrants causes all operators to defer investment until market conditions allow a greater return on investment.

Information on changes in driver behavior following deregulation is scant. At major cabstands and airports, however, over-supply of taxis was consistently reported to result in aggressive solicitation of passengers and confrontations among drivers. There is no evidence, hearsay or otherwise, indicating that deregulation acted to improve relations between drivers and customers.

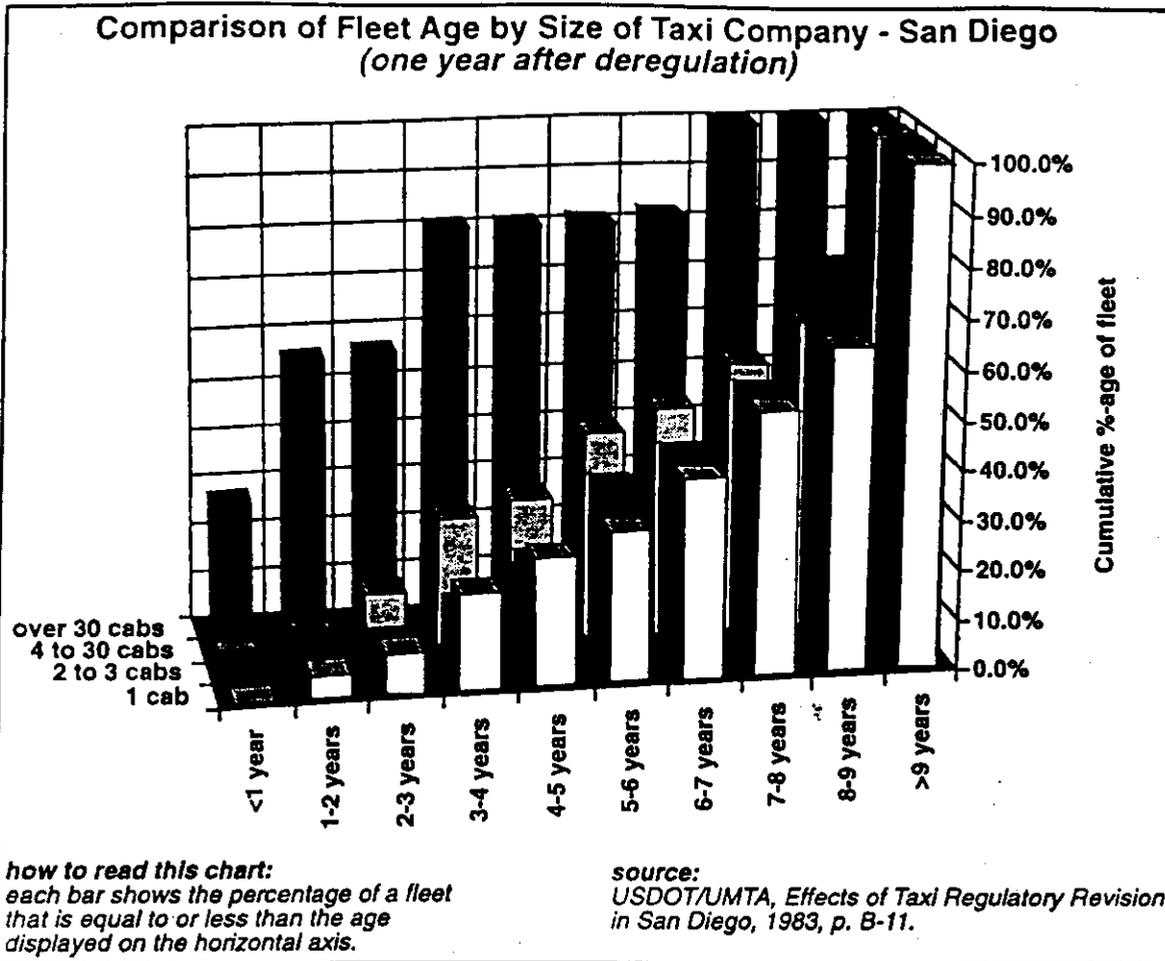
Administrative Costs

Changes in administrative costs as a result of deregulation depend on several variables, including: (1) the volume of new market entrants; (2) license application and vehicle inspection procedures; (3) the frequency of rate changes; and (4) the fee structure and cost recovery policy of the local jurisdiction.

The USDOT case studies on the effects of deregulation indicate that administrative costs either did not change or increased following deregulation. In San Diego, open entry was reported to increase the time and dollar cost of permit processing and related activities¹⁰. This was influenced primarily by the volume of

⁹ USDOT/UMTA, *Effects of Taxi Regulatory Revision in Seattle*, 1983, p. 98.

¹⁰ USDOT/UMTA, *Effects of Taxi Regulatory Revision in San Diego*, 1983, pp. 200-204.



[continued from previous page]

new permit requests submitted by market entrants. In Seattle, staff costs were reported to increase due to the larger number of taxis to be inspected. Inspection efforts were exacerbated by the provision for quarterly fare changes, which necessitated a corresponding increase in meter validations¹¹. Oakland and Berkeley, in contrast, experienced immaterial changes in costs¹². As noted earlier, open entry in these cities did not result in a large influx of new operators.

In the cities for which objective and consistent data are available regarding the effects of deregulation, the fully-deregulated model (i.e., open entry and industry-set fares) appears to have yielded few desired changes in taxi service. An increase in the number of taxis was the most clearly-attained objective. Other unanticipated and unattractive results that were associated with the large influx of new operators encouraged most open entry cities to reconsider taxi deregulation. These post-deregulation changes in regulatory structure are described in the following section.

¹¹ USDOT/UMTA, *Effects of Taxi Regulatory Revision in Seattle*, 1983, p. 146.

¹² USDOT/UMTA, *Taxi Regulatory Revision in Oakland & Berkeley, California: Two Case Studies*, 1983, p. 54.

Post-Deregulation Changes in Regulatory Structure

In response to the problems noted above, most of the cities that deregulated have since reverted to some form of regulation. As shown in the graph on the following page (top), this wave of re-regulation was led by the largest cities of the group that had the most intensive airport activity. Particularly notable was a shift from open entry to some form of re-regulation, presented in the table below.

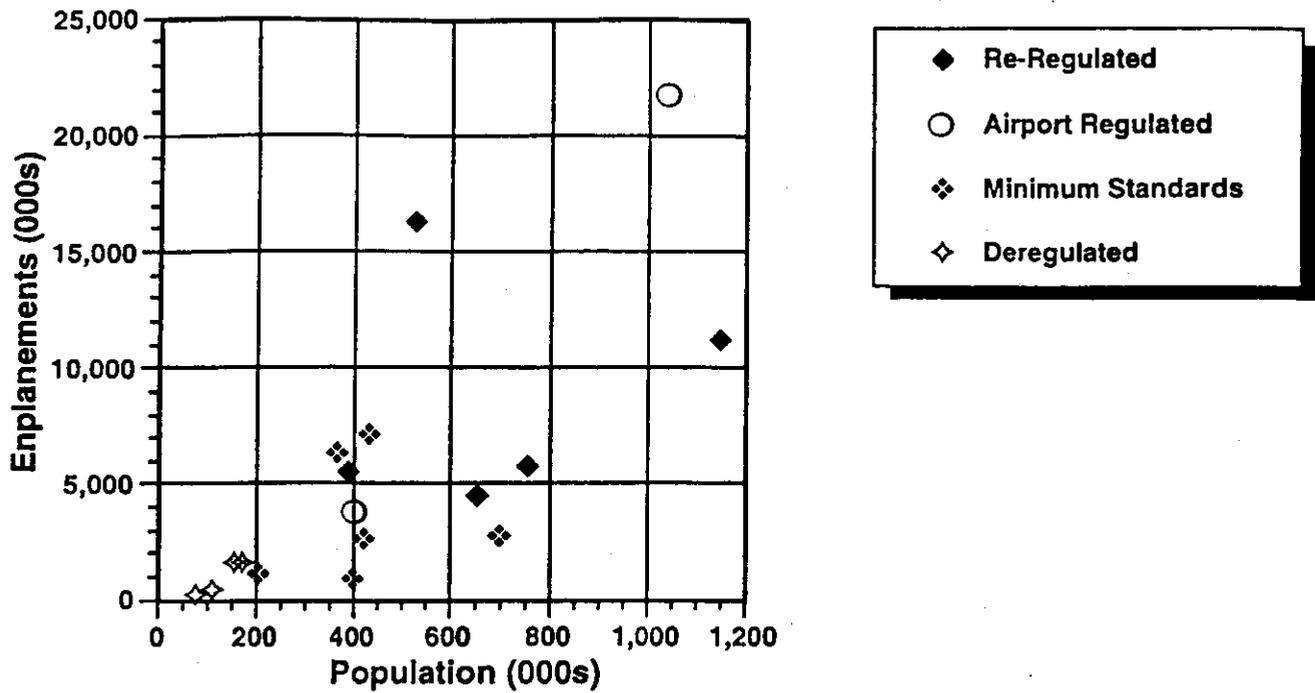
<i>City</i>	<i>Date of Initial Deregulation</i>	<i>Type of Re-Regulation</i>	<i>Date of Re-Regulation</i>
Atlanta	1965	Pre-determined ceiling, regulated fares	1981
Indianapolis	1973	Pre-determined ceiling, regulated fares	1974
Milwaukee	1979	Pre-determined ceiling, regulated fares	1992
Oakland	1979	Pre-determined ceiling, regulated fares	1988
San Diego	1979	Pre-determined ceiling, maximum fares	1982
Seattle	1979	Pre-determined ceiling, maximum fares	1984
Phoenix	1982	Airport franchise	1983
Sacramento	1982	Airport permits	unknown

The current regulatory structure for the original 21 deregulated cities shows a clear split between the fully-regulated and fully deregulated models. The current status of these cities is as follows: (1) six cities that were previously open entry have re-regulated all taxi services; (2) two cities that were previously open entry have regulated airport-based services, while retaining an open entry approach for non-airport services; (3) three cities had deregulated fares only, and have continued this practice while retaining entry controls (e.g., convenience & necessity); (4) six cities retained a minimum standards approach; and (5) four cities retained the fully-deregulated approach, combining open entry with industry-set fares. Of the thirteen cities that had originally opted for open entry, only four continue this practice today.

The cities that have fully "re-regulated" taxi services tend to be larger cities in which deregulation (i.e., open entry) had attracted a large number of independent operators - Atlanta, Indianapolis, San Diego, and Seattle. Two other large cities - Milwaukee and Oakland - re-regulated for other reasons.

Two open entry cities - Phoenix and Sacramento - chose to regulate taxi service from airports, the most visible source of problems, but retained the open entry system for all other taxi services. In these cities, private-sector "franchise systems" also have evolved wherein major hotels enter into exclusive contracts with taxi companies to provide service to their guests. Thus, the formal and informal regulation of major stand markets was effected in some deregulated cities to protect consumers who are unlikely or unable to shop for the best taxi among competing services.

**City and Population Characteristics of
Taxi Regulation and Deregulation, 1972-1982**



The cities which had limited deregulation to fares only reported no significant issues and to our knowledge have made no ensuing regulatory changes. Each of these cities has entry restrictions, however. The cities include: (1) Tampa (population ratio approach); (2) Des Plaines, Illinois (convenience & necessity approach); and (3) Charlotte (franchise system approach).

The cities which employed a minimum standards approach to market entry, which is a mid-point between full deregulation and full regulation of taxi services, likewise reported no significant issues and accordingly have maintained this structure. These cities include: (1) Portland, Oregon; (2) Fresno, California; (3) Madison, Wisconsin; (4) Kansas City, Missouri; (5) Tucson, Arizona; and (6) Jacksonville, Florida. The minimum standards (e.g., 24-hour dispatch capability) exercised in these cities act to raise the cost of market entry, thus discouraging independent owner-operators that are not affiliated with a taxi cooperative or company.

The four cities which have retained a fully-deregulated system are among the smallest of the cities that had initially implemented full deregulation. These cities include: (1) Berkeley, California; (2) Spokane, Washington; (3) Tacoma, Washington; and (4) Springfield, Illinois.

* * * * *

In retrospect, the effects of taxi deregulation have ranged from benign to adverse, depending on local conditions and markets. There appears to be scant evidence that deregulation fully achieved the goals on which its implementation was premised, though some goals clearly were achieved (e.g., more taxis, less regulatory involvement by government). Market imperfections peculiar to the taxi industry, including unusual product supply (e.g., first-in, first-out queues at cabstands) and consumers' lack of knowledge of taxi price and quality, tend to negate the improvement in price and performance associated with deregulation in other industries.

APPENDICES

A: Current & Historical Regulatory Changes
in Deregulated Cities

B: Comparative Price and Supply Statistics

Bibliography

APPENDIX A:

**Current & Historical Regulatory Changes
in Deregulated Cities**

MAJOR CHANGES IN TAXICAB REGULATION

Code	City	Type	Initial Regulation	Date	New Regulation	Current Regulation	Supply Price
	Anchorage, AK (*)	entry fares	population ratio (1:1500) government-set	1982 1983	conv & necess/ceiling (158) maximum fare	same same	158 \$9.50
O	Atlanta, GA	entry fares	predetermined ceiling	1965	open entry		
R	> > re-regulation	entry fares	open entry	1981	predetermined ceiling government-set	same same	1,582 \$7.30
O	Berkeley, CA	entry fares	predetermined ceiling government-set	1980	open entry industry-set	same same	N/A \$11.80
	Charlotte, NC	entry fares	convenience and necessity government-set	1982	franchise/conv & necess industry-set	same same	N/A N/A
	Des Plaines, IL	entry fares	government-set	1981	convenience & necessity industry-set	same same	31 \$7.00
	El Paso, TX	entry fares	franchise system government-set	1981 1987	convenience and necessity government-set (raised)	conv & necess/ceil (250) same	275 \$8.70
O	Fresno	entry fares	N/A N/A	1979	open entry industry-set		
R	> > re-regulation	entry fares	open entry industry-set	1982	minimum standards maximum fares	same same	N/A N/A
O	Indianapolis, IN	entry fares	population ratio	1973	open entry		
R	> > re-regulation	entry fares	open entry	1974	predetermined ceiling (600)	conv & necess government-set	392 \$8.15
M	Jacksonville, FL	entry fares	convenience and necessity government-set	1983	minimum standards maximum fares	same same	400 \$7.25
M	Kansas City, MO	entry fares	predetermined ceil (532) government-set	1984 1983	minimum stds industry-set	same 1986 - max fares (w/d avg)	458 \$8.41

MAJOR CHANGES IN TAXICAB REGULATION

Code ¹	City	Type	Initial Regulation	Date	New Regulation	Current Regulation	-Supply -Price ²
M	Madison, WI	entry fares	population ratio government-set	1979 1982	min. standards / franchise industry-set	same same	150 \$8.40
O	Milwaukee, WI	entry fares	population ratio	1979	open entry		
R	> > re-regulation	entry fares	open entry	1992	predetermined ceiling (324)	same government-set	324 \$7.50
	Norfolk, VA	entry fares	predetermined ceiling	1982	convenience and necessity		
	> > re-regulation	entry fares	convenience and necessity	1985	predetermined ceiling (234)	same government-set	234 \$6.85
O	Oakland, CA	entry fares	convenience and necessity	1979	open entry		
R	> > re-regulation	entry fares	open entry (600)	1988	predetermined ceiling (318)	same government-set	318 \$11.80
	Orlando, FL	entry fares	predetermined ceiling (127)	1981	predetermined ceiling (220)	1988 - pop ratio / formula (272) government-set	272 \$8.05
O	Phoenix, AZ	entry fares	state-regulated entry government-set	1982	open entry N/A	same N/A	
M	Portland, OR	entry fares	population ratio	1979	min. standards / ceiling maximum fares	same same	N/A \$8.00
O	Sacramento, CA	entry fares	population ratio (123)	1982	open entry	same	197 N/A

MAJOR CHANGES IN TAXICAB REGULATION

Code ¹	City	Type	Initial Regulation	Date	New Regulation	Current Regulation	Supply-Price ²
O	San Diego, CA	entry fares	conv & excess / pop ratio government-set	1979	open entry maximum fares		
R	>> re-regulation	entry fares	open entry	1982	closed entry (permit freeze)	N/A N/A	N/A N/A
O	Seattle, WA	entry fares	population ratio government-set	1979	open entry industry-set		
R	>> re-regulation	entry fares	open entry	1984	predetermined ceiling	same N/A	N/A N/A
O	Spokane, WA	entry fares	population ratio government-set	1980	open entry industry-set	same same	N/A N/A
O	Springfield, OH	entry fares	N/A government-set	1981	open entry industry-set	same same	10 \$8.00
O	Tacoma, WA	entry fares	population ratio government-set	1981	open entry industry-set	same same	79 N/A
	Tampa, FL	entry fares	population ratio (1:1000) government-set	N/A	population ratio (1:2000) maximum fares	same same	N/A N/A
M	Tucson, AZ	entry fares	state-regulated government-set	1982	minimum standards industry-set	same same	N/A N/A

1. Codes: O = an open entry city; R = re-regulation of an open entry city; M = a minimum standards city.

2. Current number of cabs and five-mile fare. From telephone interviews with city officials, September 1993.

APPENDIX B:

Comparative Price and Supply Statistics

COMPARISON OF TAXI PRICE AND SUPPLY IN DEREGULATED, REREGULATED, AND REGULATED CITIES

Category/Cities	5-Mile Fare			Taxis per 1K pop		Population		Number of Taxis	
	1985	1985(92\$)	1992	1985	1992	1985	1992	1985	1992
Fresno	\$9.20	\$10.79	\$9.70	0.24	0.15	268	401	63	62
Kansas City	\$6.20	\$7.27	\$7.50	1.19	1.30	444	431	530	560
Madison	\$5.83	\$6.83	\$8.40	0.42	0.52	168	204	70	107
Phoenix	\$6.70	\$7.86	\$7.22	0.39	0.49	833	1043	325	506
Portland	\$6.80	\$7.98	\$8.20	0.67	0.98	365	367	244	360
Sacramento	\$7.00	\$8.21	\$9.94	0.77	0.55	294	401	225	219
Tampa	\$5.75	\$6.75	\$8.15	1.20	0.89	285	450	343	400
Tucson	\$6.40	\$7.51	\$7.80	0.35	0.19	371	425	130	80
Average	\$6.73	\$7.90	\$8.36	0.65	0.63	379	465	241	287
Median	\$6.55	\$7.68	\$8.18	0.54	0.54	330	413	235	290
Maximum	\$9.20	\$10.79	\$9.94	1.20	1.30	833	1,043	530	560
Minimum	\$5.75	\$6.75	\$7.22	0.24	0.15	168	204	63	62
Atlanta	\$5.80	\$6.80	\$7.30	3.39	4.30	428	368	1,450	1,582
Indianapolis	\$4.70	\$5.51	\$8.15	0.52	0.52	706	757	366	394
Milwaukee	\$5.75	\$6.75	\$7.50	0.66	0.61	608	657	400	400
Oakland	\$7.00	\$8.21	\$9.40	1.29	1.16	349	388	450	450
San Diego	\$8.00	\$9.38	\$9.00	0.99	0.78	931	1,151	920	900
Seattle	\$6.80	\$7.98	\$8.00	1.15	1.32	490	530	562	700
Average	\$6.34	\$7.44	\$8.23	1.33	1.45	585	642	691	738
Median	\$6.30	\$7.39	\$8.08	1.07	0.97	549	584	506	575
Maximum	\$8.00	\$9.38	\$9.40	3.39	4.30	931	1,151	1,450	1,582
Minimum	\$4.70	\$5.51	\$7.30	0.52	0.52	349	368	366	394
<i>excluding Atlanta</i>									
Average	\$6.45	\$7.57	\$8.41	0.92	0.88	617	697	540	569
Median	\$6.80	\$7.98	\$8.15	0.99	0.78	608	657	450	450
Maximum	\$8.00	\$9.38	\$9.40	1.29	1.32	931	1,151	920	900
Minimum	\$4.70	\$5.51	\$7.50	0.52	0.52	349	388	366	394
Arlington	\$5.80	\$6.80	\$8.30	3.05	3.48	152	175	464	605
Augusta	\$4.30	\$5.04	\$6.40	0.46	0.58	240	240	110	140
Baltimore	\$4.80	\$5.63	\$6.30	1.41	1.60	769	721	1,085	1,151
Boston	\$6.70	\$7.86	\$9.10	2.68	2.67	569	571	1,525	1,525
Buffalo	\$6.15	\$7.21	\$8.75	1.08	1.06	346	343	375	365
Las Vegas	\$8.50	\$9.97	\$9.00	2.53	1.87	179	306	453	573
Memphis	\$5.35	\$6.28	\$6.65	0.40	0.52	646	576	256	300
Mobile	\$5.20	\$6.10	\$7.15	0.24	0.27	205	184	50	50
New Orleans	\$5.90	\$6.92	\$5.90	2.87	3.48	561	462	1,608	1,608
Orlando	\$5.60	\$6.57	\$6.91	1.67	1.21	133	182	222	220
Pittsburgh	\$7.80	\$9.15	\$8.17	1.22	0.82	410	365	500	300
Rochester	\$6.90	\$8.09	\$8.20	1.10	1.26	246	234	270	295
San Antonio	\$6.20	\$7.27	\$6.90	0.57	0.81	846	931	481	750
San Jose	\$6.40	\$7.51	\$10.60	0.22	0.33	673	826	150	270
Tulsa	\$5.35	\$6.28	\$7.25	0.52	0.60	375	366	196	219
Average	\$6.06	\$7.11	\$7.71	1.33	1.37	423	432	516	558
Median	\$5.90	\$6.92	\$7.25	1.10	1.06	375	365	375	300
Maximum	\$8.50	\$9.97	\$10.60	3.05	3.48	846	931	1,608	1,608
Minimum	\$4.30	\$5.04	\$5.90	0.22	0.27	133	175	50	50

Note: several deregulated and re-regulated cities are omitted due to incomplete data for 1985 or 1992.

Deregulated cities include those using minimum standards, as well as open entry.

Sources

Fares & taxis:

Derived from International Taxicab and Livery Association member surveys for 1985 and 1992.

Data for Phoenix were obtained via interviews conducted by Price Waterhouse

1985 fares were converted to 1992 dollars based on the CPI for private transportation costs (USDOL, Bureau of Labor Statistics)

Population:

Estimated from US Census. 1985 population was interpolated from 1984 and 1986 Census estimates.

1992 population was extrapolated based on growth rate between 1988 and 1990 Census estimates.

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