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Analysis of Taxicab Industry in Chicago Metropolitan Area

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The Chicago Area Transportation Study initiated a comprehensive investigation of the taxicab industry in the Chicago metropolitan area in fall 1979. The study resulted in the collection of financial and trip information from a cross section of taxi companies that ranged from rural "ma-and-pa" type operations to one of the oldest and largest urban taxi fleets in the United States. Five conclusions were drawn in the analysis that have implications for public funding policy, for efforts being made to deregulate or re-regulate the taxi industry, and for the taxi industry at large. Those five findings include the following: (a) The taxi industry is chronically weakening, (b) leasing has significantly changed short-term market risk liability and incentives for productivity on the part of operators, (c) there are both economies and diseconomies of scale in taxi operations, (d) taxi service areas have become subregional as opposed to being strictly local, and (e) taxis can supply exclusive demand-responsive service for about the same per passenger cost as publicly subsidized demand-responsive services. The paper concludes with recommendations for updating taxi regulations to recognize new operating realities and a review of public funding policy as it relates to use of, or competition with, the taxicab industry.

In September 1979, the Chicago Area Transportation Study (CATS) initiated a comprehensive investigation of the taxicab industry in the Chicago six-county area, an area that includes the City of Chicago and 263 suburban and satellite municipalities. The study resulted in the collection of both financial and trip information from a cross section of taxi companies that ranged from rural "ma-and-pa" operations to one of the largest and oldest urban taxi fleets in the United States. Five of the conclusions of this two-year study have important implications for both state and federal transportation funding policies and for the taxi industry at large. The purpose of this paper is to present those five findings.

BACKGROUND

Region

The Chicago metropolitan area, which encompasses the counties of Cook, Lake, McHenry, Kane, Will, and DuPage, offers unusually fertile ground for studying the taxi industry. Within this 3719-mile^2 area are small rural communities with populations of less than 10 000 where, until the recent introduction of Regional Transportation Authority (RTA) bus service, the local owner-operator taxi was the only "public" transportation available. There are new, rapidly sprawling suburbs and other areas that are older, more densely populated, and have well-established transit and taxi systems. Finally, there is the City of Chicago, which has densities of 13 000 people/mile^2 and a central business district (CBD) served by seven rapid transit lines, seven commuter lines, and one of the oldest and largest taxi conglomerates in the United States.

Taxi Industry

Within this six-county area there are 5741 taxis, or 0.81 taxis/1000 population. Eighty percent (4600) are in the City of Chicago. Of the remaining 1141 vehicles located in the suburbs, 75 percent are located in the older suburbs of Cook County.

Most of the cab companies are old. Checker and Yellow Taxicab Companies in Chicago date back to World War I. The suburban firms, many of which grew up as feeders to commuter rail stations, have an equally long history. We found the median age to be 25 years, with several more than 50 years old.

Few of the suburban companies operate with an exclusive franchise; nearly all experience some form of competition within their service area. The suburban companies are also relatively small; the average fleet size is 21 vehicles. The range, however, is extensive; there are numerous legal and illegal owner-operators in rural areas and a few large (100 or more vehicle) associations in the rapidly growing north and northwest suburbs. By contrast, two very large and interlocking companies (Checker with 1500 vehicles and Yellow with 2500 vehicles) control 80 percent of the taxis in the City of Chicago.

Operations and organizational structure also vary within the region. Where two-thirds to three-fourths of the Chicago taxi business is street hail, 90 percent of the suburban business is dispatched and nearly one-third of that is nontraditional taxi business (either package delivery or contract work). In Chicago, more than 90 percent of the taxicabs are leased for a flat, 24-h rate, much like a rental automobile. The driver is considered an independent operator and keeps all earnings after lease and gasoline costs have been paid. One-third of the suburban taxi firms operates on a commission structure where operators and drivers split the day's gross earnings on a 60/40 basis. The remaining cab companies are either associations of owner-operators or operate under a variable-lease system. Typically, a variable lease sets the lease rate at 50-60 percent of the driver's daily gross and is thus indistinguishable from the commission structure, except that the driver is considered by the company to be an independent contractor, not an employee.

In 1970 the taxi fleet as a whole carried a significant number of the region's trips: slightly less than 1 percent; however, that modal share has slipped to less than 0.5 percent of all daily passenger trips. In fact, one of the reasons for initiating our investigation was the suspicion that the taxi industry may be seriously weakening.

SCOPE AND RATIONALE OF STUDY

CATS initiated the two-year study of the taxi industry for three reasons:

1. To assess the financial stability of the industry. There have been numerous indications at the national level that the taxi industry may be seriously weakening (1; and correspondence of the Inter-

national Taxicab Association collected from Al LaGasse, March 6, 1981).

As with all other forms of transportation, the cost of operating a taxicab has increased dramatically during the 1970s. A barometer of this change is the increased cost of driving an automobile, which the American Automobile Association reported increasing by 53 percent between 1976 and 1980. The response of most taxi companies has been to increase fares. In the past, such an increase had little effect on ridership because a large portion of the taxi market (the business traveler and the poor) either had no alternative or were insensitive to price increases. There is now evidence that taxi demand has become, or is becoming, elastic (2).

The primary reason for this new price sensitivity is that former captives now have alternatives. The rental automobile business, which has been growing at an annual rate of 12 percent for the past several years, offers an increasingly attractive alternative to the business traveler. A recent study of taxi riders in Dallas found that half of the out-of-town users who would be unwilling to pay increased taxi fares would turn to a rental automobile as an alternative (3). The low-income taxi user, who constituted close to 33 percent of the taxi market, has benefited from the general increase in public transportation funding and service as well as the numerous new specialized transportation programs. The result is that many now have alternatives when faced with increases in taxi fares.

2. To respond to numerous complaints from and about the taxi industry. There are more than 150 different and often conflicting sets of taxicab regulations in the Chicago area. Taxi operators have frequently complained about the deadheading caused by nonreciprocal regulations and the time-consuming and redundant safety inspections required in each municipality they serve. Further, with the emergence of RTA in the past six years, many have complained that new feeder buses and dial-a-ride (DAR) services are encroaching on their market. Consumers have complained about fare gouging, lack of neighborhood service, and escalating prices.

3. To explore ways that this existing resource could be more efficiently used and more effectively incorporated into the existing transportation system. Several authors (4-6) have suggested that taxicabs can provide some forms of public transportation cost efficiently. Options include use of taxis as a substitute for owl or fixed-route service, for service to the elderly and the handicapped, and for low-density circulation systems.

DATA SOURCES

Several data sets were assembled to carry out the multifaceted scope of the investigation. In the paragraphs below, we briefly describe the five data sets used in reaching the conclusions presented here.

Financial Survey of Taxi Operators

In-depth interviews were conducted with taxi company owners and managers to obtain detailed financial information. Although this approach was extremely time-consuming, it avoided the problem of one operator including utility and radio repair bills in administration while another operator included these costs in maintenance, thereby rendering the data noncomparable.

Of the 100 or more taxi companies in the area, 36 agreed to participate in the 6-h interview; 31 provided reasonably complete information. Of these, 28 were suburban firms that collectively own 58 percent of all suburban taxis and 3 were Chicago firms operating 37 percent of the Chicago taxi fleet.

The survey elicited the following categories of information:

1. The organizational structure and management history of the company;
2. Fleet information: number, age, maintenance, and replacement practices;
3. Driver information: number and compensation procedure;
4. Full documentation of 1979 operating expenses based on 19 preestablished expense items;
5. Revenue estimates for 1979 and information on the source of revenue; and
6. Vehicle use; each operator was asked to keep daily odometer readings on at least 10 of his or her vehicles for seven days.

Wherever possible, cost data were obtained from actual records--either income tax returns, accountants' statements, or ledgers kept by the company. Property owned by the taxi company and used for operating the business was assigned an annual rent of 10 percent of the appraised value. Annual depreciation for nonvehicle capital equipment was assigned as follows: $N(P - S)/L$, where N is number of items in stock, P is purchase price, S is salvage value, L is life span, and unsalaried labor (usually owners whose wages were company profits) was assigned an annual salary of $15 000 per full-time equivalent employee.

Origin and Destination Data

During the week of May 14, 1980, the drivers of each of the taxi companies that participated in the financial survey were asked to keep trip records (in the form of trip sheets) of all trips on a selected day of that week. The records contained information on origin, destination, fare, number of passengers per trip, as well as vehicle odometer readings.

Origin and destination information was collected for 6058 suburban trips from 31 percent of all suburban taxis, and 5700 City of Chicago taxi trips were also collected, which represents about 10 percent of all Chicago taxi vehicles. Greater detail on survey methodology is presented elsewhere (7).

Vehicle Registration Records

The Illinois Secretary of State's office provided 1979 and 1980 taxi and livery vehicle registration records. These records contain information on the taxi vehicle and its owner. From these records we derived information on the total supply of taxis, their geographic distribution, and vehicle age. Similar summary information for 1973 and 1975 was available elsewhere (6).

Time Series Data on Checker Taxicab Operations

Checker Taxicab Company, which operates 1500 taxis in the City of Chicago, provided CATS with four years (1976-1980) of historical information on operating costs and vehicle use for both their commissioned and lease fleet. In addition, they provided information on the productivity and revenue of their commissioned fleet, which at that time consisted of about 200 vehicles.

Financial and Operating Data on Publicly Subsidized Social Service Transportation Services

A concurrent study carried out by the University of Illinois, Chicago Circle (UICC), under the auspices of a grant from the Program of University Research,

If the taxi industry is to extricate itself from its current financial situation, two forms of public action will be required. First, taxi ordinances must be updated to reflect current operating realities. Included in that update would be provisions that allow taxis to offer a broader range of services to a larger market segment and quicker recovery of costs and greater flexibility in the pricing of services. If prices must be regulated, then those regulations should distribute the risk of the fixed price equally between the company or operator and drivers.

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Taxi-Based Public Transportation for the Elderly and the Handicapped

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The system organization, performance, and taxi firm impacts of California's taxi-based elderly and handicapped (E&H) systems are analyzed, and the results are compared with taxi-based general-public demand-responsive transportation (DRT) systems. The data were gathered from 48 California taxi-based E&H systems. Sponsors have restricted ridership to the elderly and the handicapped due to budgetary constraints and, when such constraints are severe, they have also rationed service among this group. The low demand services that often result are ideally suited to provision by taxi firms, as they can be integrated with other taxi services. In many cases demand is so restricted that sponsors simply subsidize regular taxi service, as shared riding is difficult or infeasible. Due to the prevalence of such subsidized exclusive-ride taxi (ERT) services, E&H systems are considerably less cost effective than taxi-based general-public DRT. E&H services have been organized in essentially three ways: as traditional dial-a-ride operations, as subsidized ERT service, or as user-side subsidy shared-ride taxi (SRT) service. SRT has proved to be the key to superior performance. In general, shared-ride operations result in high levels of performance, provide the most favorable taxi firm financial impacts, and initiate the company into the paratransit diversification process. In situations where the sponsor faces a severe total cost constraint, however, organizing a subsidized ERT system is probably the only feasible strategy. Subsidized ERT systems are about 40 percent more expensive than user-side subsidy SRT systems, have less impact on company revenues, and do little to enhance taxi firm evolution.

Two trends have dominated the recent diffusion of demand-responsive transportation (DRT) services. The first is the growing reliance on private contractors, particularly taxi firms, as DRT providers, albeit within the framework of a publicly subsidized and sponsored transit service. The second trend is the increasing tendency of government sponsors of DRT systems to restrict use of the service to certain population subgroups or individuals, most notably the elderly and the handicapped. In a number of communities around the country, these two developments have coincided, which results in the establishment of a generation of taxi-based restricted-ridership DRT systems, typically targeted at elderly and handicapped individuals. California alone contains nearly 50 such public transportation systems.

Taxi-based DRT systems for the elderly and the handicapped are not simply a smaller-scale version of general-public DRT systems but instead represent distinctive forms of community-level transit. The joint decision to restrict ridership and to use a local taxi firm as the provider has a significant effect on system organization and performance. Restricting use to the elderly and the handicapped reduces demand well below the levels achieved by general-public DRT systems, in which the elderly and the handicapped typically comprise about 25-50 percent of the passengers. In addition, many sponsors impose restrictions within this category, thereby further decreasing potential demand. The resulting low demand density limits the ability of the provider to practice shared riding and often renders it infeasible. In fact, the use of a local taxi firm gives the sponsor the option of simply subsidizing traditional exclusive-ride taxi (ERT) service. In contrast to taxi-based general-public DRT systems, which are normally subsidized shared-ride taxi (SRT) services that often use vehicles dedicated solely to the DRT system, many taxi-based elderly and handicapped (E&H) systems closely resemble ERT operations in their organization, fare structure, productivity achievements, and cost-effectiveness. Moreover, the