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Involving Private Providers in Public Transportation Programs: Administrative Options

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NOTE:

This report, as originally submitted by the contractor, contained recommendations for program development which have been edited from this printing.

Involving Private Providers in Public Transportation Programs: Administrative Options

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ABSTRACT

Administrators of public transportation programs are becoming increasingly interested in the options available for involving private taxicab, van and bus operators as service providers in their programs. Two general administrative approaches have been employed: provider-side subsidies, in which subsidy funds are paid directly to a service provider for offering certain specified services and fare levels; and user-side subsidies, in which selected users may obtain transportation vouchers at discounted prices and then purchase services from the providers of their choice. Until relatively recently, provider-side subsidies have been the almost exclusive choice of administrators dealing with private providers. However, experiments and case studies employing user-side subsidies have shown this approach to be a viable option for many types of programs. This paper presents some general criteria for comparing the two approaches, and discusses the guidance available from readily available data. Additional data collection from a selection of existing programs is recommended to shed light on some important unanswered questions.

INTRODUCTION

Many public programs at the federal, state and local levels provide funding for public transportation services. Depending on program mandates, such services have been aimed at the general public, at special user groups like the elderly and handicapped, or at clients of social service programs.

Agencies administering the funds available for public transportation services have become increasingly interested in using private providers for these services rather than relying on their own in-house capabilities. Two factors have been primarily responsible for this trend. First, many social service agencies and local government units have found that their lack of transportation experience makes their public transportation operations rather inefficient and costly. Second, the proliferation of transportation services operated as a sideline by numerous agencies has often led to service fragmentation and duplication.

Partially in response to these problems, a number of federal programs funding social services have strongly encouraged their grantees to turn to existing providers for any transportation services for their clients. The Older Americans Act of 1965 (as amended), for example, designates the Area Agencies on Aging (AAA) as a provider of last resort: if other providers exist in the community, the AAA's are to provide service through them. The Urban Mass Transportation Act of 1964 (as amended) also insists that private providers be given every opportunity to participate in projects funded under the Act: Section 3(e)(2) of the Act requires assurances that each program of projects "to the maximum extent feasible, provides for the participation of private mass transportation companies."

Involving private providers in public transportation programs requires well-defined administrative arrangements for disbursing public subsidy funds to the providers. It is convenient to group the available administrative options into two general categories:

- those for which the subsidy is paid directly to the transportation provider (such as a bus company or a taxicab operator), for offering certain specified services at fares which produce insufficient total revenues to cover the provider's costs. Subsidies of this type will be termed provider-side subsidies;

- those for which certain "target group" users are permitted to purchase transportation "vouchers" at a price substantially below the value of the vouchers to the transportation providers. The users exchange these vouchers for transportation services, and the transportation providers then redeem the vouchers from the public agency at values agreed upon in advance. These approaches will be termed user-side subsidies.

Until relatively recently, subsidies for transportation services have been almost exclusively "provider-side": capital grants and operating assistance have been directed to selected providers to support the service and fare levels specified by governments at the federal, state and local levels. Providers of conventional fixed route, fixed schedule transit services have been the recipients of most of the subsidy funds, and virtually all these providers are now publicly owned and operated in U.S. cities. Subsidy funds also have been used to support paratransit services: services like shared taxis, subscription and other personalized services "in between" the private automobile and conventional transit. Provider-side assistance for these paratransit services has been directed to non-profit agencies and to taxicab companies, primarily through purchase-of-service contracts between providers and subsidizing agencies.

User-side subsidies differ markedly from conventional provider-side approaches. Under user-side arrangements subsidy funds are placed in the

hands of eligible public transportation users in the form of discounted tickets, charge slips, or other means for purchasing services at reduced rates. Each user then patronizes the provider of his or her choice, and the provider redeems used tickets or charge slips for their full value from the subsidizing agency. Providers thus receive subsidies for the trips they serve rather than for maintaining a certain specified level of service as in the provider-side approach. The user-side approach has been used by the federal medicaid program for covering the costs of certain medical-related trips (usually made by taxi) but to date has received relatively little attention from administrators of other transportation programs.

This paper seeks to organize the available evidence on these options for subsidizing public transportation services through private providers. It starts with a brief review of the various types of public transportation programs and their objectives as they pertain to the issue of involving the private sector. The discussion also touches on arguments in favor of the private-sector option. The provider-side and user-side approaches for disbursing public transportation funds are then reviewed, and general criteria for evaluating these alternatives are specified.

The next section reviews experience to date with provider-side and user-side subsidies, and develops a preliminary assessment of their performance with respect to the evaluation criteria. The paper concludes with a summary of remaining questions, focussing especially on the data needed to complete an adequate assessment of these subsidy approaches.

POLICY OBJECTIVES AND APPROACHES

Introduction

Numerous programs at the federal, state, and local levels provide funding for public transportation services. The largest single program is the federal mass transportation program administered by the U.S. Urban Mass Transportation Administration (UMTA). In 1981 this program will disburse approximately $2.7 billion in discretionary Section 3 grants and $1.1 billion in Section 5 formula grants to urbanized areas. A further $75 million will be disbursed by the U.S. Federal Highway Administration (FHWA) through state governments to non-urbanized areas. State and local governments also contribute substantial levels of funding from their own sources, and in aggregate account for more than double the federal contribution.[1/]

In addition to the federal, state and local funds dedicated directly to public transportation programs, much of the funding from special programs for the elderly, the poor, and the handicapped finds its way into public transportation services. Although the absence of detailed accounting of these funds by transportation purposes precludes any accurate estimation of their magnitude, they appear to be well into the hundreds of millions of dollars annually.[2/]

In addition to earlier regulatory objectives of maintaining a safe and reliable public transportation system, government agencies are now using substantial levels of public funding to pursue broader social objectives. The programs they fund are usually aimed at accomplishing one or more of the

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1/ American Public Transit Association (1979).

2/ Saltzman (1980).

following types of changes:

- improving the mobility of persons without ready access to a private automobile,
- attracting private automobile users to higher occupancy services such as car pools and buses to reduce the congestion, pollution, and energy consumption associated with their travel, and
- making selected locations in urban areas more accessible for shopping, business, and other activities.

Government funding for public transportation programs is presently spread among numerous federal, state, and local programs, each with its own set of objectives, eligibility requirements, and administrative procedures. Some programs have overlapping objectives, leading to questions about which program would pay for the subsidy on a particular trip. Restrictive eligibility and administrative requirements sometimes result in inefficient duplication of facilities: vans bought for the client group on one agency often cannot be used to serve an equally needy but different client group of another agency. And procedures adopted by one program sometimes produce negative side effects for another program: earmarking subsidy funds for a costly new van service for elderly residents may deprive an existing taxicab operator of much of his former business, and reduce the service levels he can provide to other agency client groups and to the general public.

While most of the public subsidy funding currently is used to support publicly owned and operated transit authorities, a significant and growing level of funding is being devoted to services provided by private transportation companies or organizations. Private taxicab companies have been employed to provide subsidized dial-a-ride services for the general public and for special user groups like the elderly and handicapped. Specialized

private carriers operating wheelchair accessible vans provide services to the wheelchair-bound in a number of communities. And non-profit human service agencies often provide transportation services to their client groups as one component of a larger package of nutrition, health, and recreation services.

As funding for public transportation services becomes more restricted, interest in involving private providers as a cost-saving measure tends to grow. Since the next four or five years seem certain to bring greater fiscal austerity for public transportation programs, the role of private providers in these programs may well increase. The likelihood of this development suggests that greater attention should be paid to the various administrative options for involving private providers in public programs. The following sections outline a general approach for assessing the options available.

Procedures for Assessing Subsidy Approaches

An assessment of any proposed improvement in a public transportation program involves a careful accounting of benefits, costs, and cost-effectiveness.3/ Administrative options for involving private providers in a public transporation program should be subjected to the same kinds of assessment procedures as any other proposed improvement, such as purchasing new vehicles or adding new services. The various components of the benefit, cost, and cost-effectiveness measures which might be affected by new administrative options therefore must be identified and likely changes in them quantified.

3/ Kirby and Miller (1981) discuss assessment procedures for short-range public transportation improvements.

The benefits of public transportation programs are determined primarily by the impacts of the programs on the travel behavior of eligible user groups. (While some benefits are undoubtedly derived from increased options for travel, these are virtually impossible to quantify.) Impacts on travel behavior can be characterized in three distinct steps:

- the participation of the eligible users in the program
- the changes in aggregate trip-making by participating users
- the distribution of the travel benefits among eligible users

The costs of public transportation programs which are sensitive to administrative options are determined by the following factors:

- the type and degree of competition between providers
- the administrative procedures required to guard against fraud and to provide adequate accountability to funding agencies
- the procedures employed to meet labor protection requirements
- the type and degree of coordination between different funding sources

The experience to date with different administrative options for involving private providers is discussed later in the paper. The various aspects of program benefits and costs listed above form the framework for assessing this experience, and for identifying significant gaps in current knowledge. Before beginning this assessment, however, we review briefly the rationale for private provider involvement, and discuss the two main approaches for disbursing subsidy funds to these providers.

The Private Sector Rationale

Relying on private providers for public services often has been viewed

as a means of improving cost-effectiveness.[4/] The expectation that private providers can operate public transportation services in a more cost-effective manner rests on three main arguments. First, private providers have extensive experience in managing transportation operations in a competitive environment. Second, the labor market for private providers tends to be more competitive than for public agencies, and private providers can therefore pay lower wages. Third, going to private providers enables programs with very low demand levels to pool their resources for transportation services through a series of bi-lateral agreements between providers and the respective agencies. Such arrangements tap any available scale economies in service provision without requiring complex interagency agreements.

Proponents of employing private providers such as taxicab companies and small inter-city and charter bus operators have also argued that the subsidy funds may help shore up marginal industries. The subsidy threfore not only benefits the subsidized users, but also the general public by keeping an important service in business.

Provider-Side Subsidies

Under the provider-side subsidy option, payments are made directly to providers on the basis of information they submit concerning service levels. The typical example for such an arrangement is a purchase-of-service agreement between a sponsoring agency and a private provider. These agreements commonly are close-ended, specifying a certain amount of service at a given unit cost, for a given total dollar figure. Provider-side subsidy arrangements vary widely, depending on the needs and interests of the sponsoring

4/ For a general overview of the private provision of public services, see Fisk, Kiesling, and Muller (1978).

agency, and on the characteristics of the transportation system. We can identify a number of major variants on the basis of their approach to several key issues.5/

Most public agencies subscribe in principle to the notion of competitive procurement. However, genuinely competitive procurement approaches tend to be the exception rather than the rule. In smaller communities especially, competition among providers is limited. In many instances, there is only one local operator with the managerial and financial capabilities to compete for any contracts. In other cases, the agency may be familiar and comfortable with a particular provider. Moreover, many local funding programs are quite small in scale, and the costs of a formal competitive procurement process would be burdensome. The larger funding agencies in major population centers tend to select private providers in a more formal manner, though even in these cases the number of providers submitting competitive proposals is usually quite small.

Another issue concerns the disposition of vehicles used in providing services. Programs basing their subsidies on service contracts often require dedicated vehicles; that is, vehicles that serve exclusively the rides subsidized. These sponsors seem to prefer that vehicles be reserved for the eligible population, usually carrying an appropriate logo. Teal et al. (1980) note that such requirements often reflect primarily political objectives. Arrangements involving dedicated vehicles are also common in situations in which the sponsoring agency owns the vehicles and leases them to the provider.

Provider-side subsidy programs allowing for integrated vehicle use, that is, the use of vehicles by persons other than the program's clients, make it

5/ This discussion draws on Teal et al. (1980) and Ernst et al. (1980).

necessary to base subsidies on service consumption. Otherwise, it is impossible to determine any basis for the subsidy. In practice, service consumption is measured in a number of ways. Most programs focus on the number of trips by the eligible population, up to a certain ceiling set by budgetary constraints. Other programs have begun to use passenger miles as the basis for the subsidy. As the specificity of the service consumption measures increases, so does the reporting burden on the provider (particularly the drivers). This has been one of the main administrative problems in such provider-side approaches.

In addition to specifying the overall service level, provider-side subsidy arrangements often attempt to influence service quality, either by establishing minimum standards, or by providing direct incentives to providers to improve service quality. However, handling these incentives in a contractual manner requires considerable effort on the part of the sponsoring agency in drafting the contract document, and in monitoring compliance with the requirements. Teal et al. (1980) report that attempts in California to influence the quality of shared taxi services through performance incentives have not been very successful.

User-Side Subsidies

In some form or another, user-side subsidies have been used in funding public transportation services for special user groups for some time. However, as a systematic approach to subsidizing such services they are of more recent origin. Under user-side arrangements, users purchase or receive free of charge discounted tickets, charge slips, or other means for purchasing services from qualified providers. Users can patronize the provider of their choice, and pay for the service with their "vouchers", plus any user contribution in cash. In addition to tickets and charge slips, the term "voucher" includes

payment mechanisms such as scrip, counter-signed checks, or credit cards that can be used as evidence that the trip has been made. The providers then redeem the used vouchers for their full value from the subsidizing agency. Thus, the actual cash subsidy for transportation services still goes to the providers. However, users determine how much each participating provider receives.

The user-side subsidy approach has played a prominent role in other areas of public categorical support for selected groups, particularly nutrition (food stamps), and housing (housing allowances). Some areas have also experimented with educational vouchers. In transportation, the user-side approach has been used by the federal Medicaid program for covering the costs of certain trips for medical purposes, usually by taxicab. Until recently, though, it has received relatively little attention from administrators of other programs providing funding for public transportation services.

Table 1 provides an overview of recent applications of user-side subsidy schemes to public transportation programs in the U.S. All of the programs listed rely on charge slips or tickets. Tickets must be purchased by the user from a distribution center in advance of the trip, while charge slips can be provided by the driver. With charge slips, the user is typically required to fill in certain trip information, including the total fare and the user payment, and to sign the completed slip. The user payment is given to the driver along with the completed charge slip at the end of the trip.

Charge slips have the advantages of allowing for precision in fares and user payments, and avoiding advance purchase requirements. They do require some determination of eligibility by the driver, however. By comparison, tickets are much easier to handle once they have been purchased, reducing demands on drivers and users, and reducing transaction time in the vehicle.

TABLE 1

RECENT USER-SIDE SUBSIDY APPLICATIONS

Location	1970 Population	Year Began	Status	Subsidy Mechanism	Provider(s)	Administrative Agency
PROGRAMS FOR ELDERLY AND HANDICAPPED PERSONS						
Danville, Illinois	45,000	1975	Ended 1978	Charge Slip	Taxi Companies	City
Kansas City, Missouri	507,000	1977	On-going	Tickets	City, Taxi Companies, Human Service Agencies	City
Kinston, North Carolina	25,000	1977	On-going	Tickets	Taxi Companies	City
Lawrence, Massachusetts	67,000	1978	On-going	Tickets (Bus & Taxi), Charge Slip (Wheelchair Service)	Taxi Companies, Bus Company, Wheelchair Service Companies	City
Montgomery, Alabama	133,000	1977	On-going	Charge Slip (Taxis) Tickets (Bus)	Taxi Companies, Transit Authority	City
Oklahoma City, Oklahoma	367,000	1976	On-going	Tickets	Taxi Companies, Wheelchair Service	Transit Authority
Oroville, California	16,000	1978	On-going	Tickets	Taxi Companies	City and County
Santa Clara County, California	1.1 million	1976	On-going	Charge Slip	Taxi Companies	Non-Profit Transportation Agency
PROGRAM FOR HANDICAPPED PERSONS						
Milwaukee, Wisconsin	1.4 million	1978	On-going	Charge Slip	Wheelchair Service Companies	Transit Authority
PROGRAMS FOR LOW-INCOME ELDERLY AND/OR HANDICAPPED PERSONS						
Exeter, New Hampshire	10,000	1973	On-going	Tickets	Taxi Companies	Council on Aging
Seattle, Washington	1.2 million	1978	On-going	Tickets	Taxi Companies	Transit Authority
State of West Virginia	1.7 million	1974	On-going	Tickets	Transit, Taxi, Intercity Carriers	State
PROGRAMS FOR GENERAL PUBLIC						
Hanville, Illinois	45,000	1977	On-going	Tickets	Private Bus Company, Taxicab Company	City
Hopkins, Minnesota	13,000	1980	On-going	Tickets	Taxi Company	City

A credit card mechanism might provide some of the advantages of both tickets and charge slips. There would be no advance purchase requirements, and rapid passenger processing could be achieved by using automatic card readers. However, as Nelson (1976) reports, the technology of automatic card readers does not seem reliable enough at present to support this approach on an on-going basis.

Virtually all the programs listed in Table 1 require that eligible users have some kind of identification. In many cases, special identification cards are issued for this purpose, with each eligible user assigned a unique identification number. In programs like Montgomery, Danville, and Milwaukee that rely on charge slips, the user's identification number and trip information are recorded on each charge slip submitted. Program administrators can conduct careful checks (including requesting user and provider confirmations) on each of the charge slips submitted. In practice, such checks are conducted only at random or on charge slips with incomplete or erroneous information. In Kinston, tickets are coded with user identification numbers at the time of purchase for monitoring purposes. In most ticket programs, though, the tickets have no user identification.

Administrative agencies normally rely on providers to verify eligibility on a trip-by-trip basis. This responsibility ultimately falls to the driver, who can request that a user display the identification designated for the program. In the case of charge slips, administrators could check signatures on completed slips against those in user files. Whether and how rigorously such checks are made varies greatly from one location to the next. Enforcement of eligibility requirements may often rely on fairly informal procedures, particularly where obvious physical characteristics such as age may be the criterion.

The emphasis on verification reflects a continuing concern with the potential for fraud and abuse in user-side subsidy programs. However, fraud in user-side schemes requires collusion between provider and user. Such schemes should be no more susceptible to abuse than provider-side schemes that rely on the provider alone. For example, a provider-side subsidy scheme operating in Western Maine sells service to several agencies on the basis of passenger-miles (with given budget ceilings for each program). Records on the use of services by individual are kept by the driver. There appears to be no a priori reason why such a system should be inherently less susceptible to fraud than a user-side subsidy approach.

Many user-side subsidy applications involve only limited competition on a trip-by-trip basis among providers. The problem lies to a large extent with local regulations restricting the number of qualified providers, and with certain restrictions on the use of funds. For example, UMTA funds can only be used to support shared-ride arrangements. This requirement limits the circle of providers qualified to compete for the subsidy to operators with adequate dispatching capabilities. In many areas, that circle is quite small.

Another element in user-side applications has been the varying degree of subsidization according to the user's needs. That element is particularly important in situations involving several agencies combining to subsidize overlapping client groups through a user-side scheme. Such an approach to coordinating social service transportation services is currently being tested in a demonstration project in Chico, California, under the sponsorship of UMTA's Service and Methods Demonstration Program.

Programmatic Constraints

Program administrators have often looked at user-side subsidies as a

qualitatively different approach from their existing provider-side schemes for meeting their clients' mobility needs. As a result, they have been uncertain whether their subsidy funds can in fact be distributed in this manner. To date, however, we have been unable to find any program regulations that would prohibit the use of this approach for disbursing public transportation funds.

Relevant regulations pertain to both provider-side and user-side applications, particularly with respect to vehicle use. UMTA-funded services require shared-ride arrangements. Similarly, some programs that provide funds for the purchase of vehicles stipulate that clients of these programs be given priority in using these vehicles. However, contrary to some long-held beliefs, no program prohibits the use of such vehicles by individuals other than the program's own clients.

Programmatic constraints affecting the choice of subsidy approaches are more likely to be rooted in budgetary limitations, as well as other resource restrictions, such as staff expertise regarding transportation issues. These are the same factors that encourage agencies to turn to the private sector in the first place. They may preclude certain options that call for special administrative efforts, even though the benefits of these options may be substantial.

EXPERIENCE TO DATE

To date, public transportation programs involving private providers have been concerned almost exclusively with on-call paratransit services like dial-a-ride. These services have been provided for the general public and for special user groups such as the elderly, the handicapped, and the low income. Very few programs have employed private providers for conventional fixed route services; by and large, publicly owned transit authorities still operate these services entirely with their own vehicles and drivers. Some public funds have been used to promote van pooling and other ridesharing services for the rush hour, but this funding has not been provided for ongoing subsidies. The use of taxicabs or other small vehicles as a substitute for publicly owned buses in low density areas has been discussed but not implemented in U.S. cities, though some European cities have adopted this strategy.6/

While the use of private providers to substitute for public transit operations appears to have considerable cost-saving potential, the protections in transit labor contracts make this a difficult strategy to implement. If the fiscal stringency predicted for public transportation programs becomes a reality, however, involving private providers may be the only alternative to transit service reductions. Publicly owned and operated transit services may have to be limited to basic "spine" systems, with local funding used to support community-level feeder and circulation services. The potential for private operators to be the providers for these community-level services appears substantial.

6/ Kirby (1981).

It follows, therefore, that in reviewing experience available to date we must be concerned primarily with on-call paratransit services. While these services provide some information on the benefits, costs, and cost-effectiveness of alternative administrative approaches, they suggest a number of areas where additional information is needed. Improved understanding of these approaches depends on the accumulation and documentation of more experience with private provider involvement, particularly in the provision of conventional fixed route, fixed schedule services.

Impacts on Benefits

Programs providing funds for the type of paratransit services considered here share one primary goal: to improve the mobility of the eligible population. Focusing on an urban context, Kirby and McGillivray (1979) define mobility as "the ability of urban residents to travel from one place to another in an urban area." They identify two kinds of benefits resulting from mobility changes caused by new (or changed) transportation services: "...those derived solely from options for travel, and those derived from trips actually made."

Determining benefits associated with increased options for travel has proved exceedingly difficult, even for major transportation investments, let alone for small-scale transportation programs. Thus, research on paratransit services has focused on travel behavior responses to changes in transportation services.

Research on travel impacts has been concerned primarily with user-side approaches, since these programs have received greater attention as innovations. The influence of the subsidy disbursement mechanism on travel behavior has not been studied systematically for provider-side approaches. As a result, we cannot say whether the two mechanisms differ generically in their user impacts.

We should note parenthetically that ignorance on this issue is by no means limited to the transportation field. Researchers and practitioners in other areas of government subsidies to the poor find themselves in a similar quandary.

Moreover, the experience with user-side subsidies thus far lacks one important component -- a broader range of transportation options. Observers have theorized that eligible users value each dollar of subsidy more highly if they have more flexibility in spending it. Thus, the impact of each subsidy dollar on the recipients' well-being should be greater for user-side applications that allow for a choice among different types of transportation services. Since user-side subsidy programs to date have been limited to one or a few qualified services, we cannot test that theory from existing data.

With these caveats, we can now summarize the available evidence concerning the impacts of provider-side and user-side approaches on the travel benefits generated by public transportation programs. Specifically, we look at participation, trip-making, and the distribution of benefits across the eligible population.

Participation

User-side subsidy approaches typically introduce another layer between eligibility and actual use by requiring registration. In most provider-side programs, no separate registration has been required. Kendall (1979) summarizes findings from various user-side subsidy programs. Registration as a percentage of the estimated eligible population showed wide variations across sites, from 4 to 47 percent, but seemed to fall predominantly into the 15-30 percent range. Differences in this rate are likely to reflect differences in outreach intensity and in the characteristics of the existing transportation system.

The data on the degree of market penetration for provider-side subsidy programs are scant. Ernst et al. (1980) report on the findings of a survey of elderly persons in five locations around the country regarding the knowledge and use of specialized transportation for this population group. Usage rates varied from about 5 percent in major urban areas (Miami and Houston) to 15-18 percent in the rural sites (South Carolina and Maine). In the rural areas, the specialized services examined constituted virtually all the public transportation services available to the elderly population. Thus, the participation rates for these sites are probably indicative of the total percentage of the target group likely to use public transportation services. These participation rates in provider-side subsidies for special user groups are of the same order of magnitude as those found for user-side approaches. Similar rates have been observed for other provider-side subsidy programs focusing on special user groups.7/

Trip-Making

The available data for the actual usage of paratransit services under both subsidy mechanisms suggest that participants (or registrants) take relatively few trips on the subsidized systems. For three user-side demonstration projects (Danville, Kinston, and Montgomery), Kendall (1979) reports that 34, 60, and 15 percent of registrants, respectively, use the system at least once during any given month. The non-users registered primarily to have the back-up option of project services in case of an emergency.

Mean monthly trip rates for registrants who do use the paratransit services in these three user-side demonstration projects ranged from 5.1 to 7.9.

7/ Transportation Systems Center (1978).

The higher trip rate applies to Kinston which has no public transit and lower automobile availability than the other two sites.

In a provider-side application, Portland's LIFT, only 25 percent of the registrants used the service at least once in a given month. Two percent of the eligible population (10 percent of the registrants) accounted for 74 percent of all trips. The monthly trip rate for active users in this particular project was 7.0; within the range established for the user-side subsidy applications. Similar conclusions hold for other provider-side schemes.

Thus, the available evidence suggests that user-side and provider-side approaches do not differ systematically in terms of overall trip rates. These rates seem to be more sensitive to variations in local conditions and actual service patterns than to subsidy mechanisms. The question of whether different mechanisms in fact affect mobility differently can only be answered on the basis of better data. At the present time, our understanding of travel behavior, particularly for the elderly and handicapped (the target groups for many paratransit programs), is too limited to enable us to assess the net effects of a given subsidy program on behavior. Data on the type that have been collected through travel diaries in Lawrence, Massachusetts, should provide a better basis for examining these kinds of questions.

So far, the issue of actual travel impacts is subject to speculation on the basis of retrospective data and hypothetical questions ("What would you do if this [subsidized] service did not exist?") On the basis of such data, McGillivray (1978) concludes that in the user-side subsidy scheme in Danville about one-half of all the project taxi trips were "new" taxicab trips. However, the majority of these trips would have been made anyway by other modes. This conclusion also holds for other user-side as well as provider-side applications.

Kirby and Miller (1981) conclude:

> ... for both special user group and general purpose [paratransit] programs the impacts are primarily facilitation of existing trip-making rather than generation of new trips ...

Whether such outcomes are appropriate and desirable depends on the specific objectives of the funding programs.

Distribution of Benefits

One of the potential advantages of the user-side subsidy approach that has been cited in the literature is its ability to target the assistance more finely. The amount of vouchers or tickets and their cost to the user can be adjusted to reflect differences in needs and ability to pay. However, in the applications thus far, little use has been made of this potential feature. Consequently, the effects of better subsidy targeting in terms of the distribution of benefits among members of the eligible population cannot be examined.

Thus, user-side and provider-side applications differ little with respect to the distribution of potential travel benefits. Available data fail to show any systematic differences between distribution patterns under the two subsidy mechanisms. In both cases, self-selection seems to generate a distribution of actual benefits that is desirable from an equity point of view: the eligible individuals most in need of the services tend to use them more than other members of the target population. In his summary of evidence on user-side subsidy applications, Kendall (1979) concludes:

> Eligible persons who do not register seem to be more self-sufficient, having higher incomes and acceptable transportation alternatives ... [D]ifferences between registered and eligible non-registered persons are an important indication that the subsidies are being used by those who need them most.

The survey of elderly individuals and their usage of specialized transportation

services reported in Ernst et al. (1980) also found that those elderly most in need (the poor, the very old, the handicapped, and the ones living alone) use such services more. Since all of the services covered were of the provider-side type, the self-selection seems to hold regardless of the subsidy mechanism. Even so, further targeting of the assistance toward the most needy could presumably improve the overall cost-effectiveness of subsidized paratransit services.

Impacts on Costs

In examining the evidence regarding the impacts of different subsidy mechanisms on program costs, two caveats should be mentioned. First, as we have noted above, actual competition in user-side applications has been much more limited than is necessary and desirable under this option. The reasons for this pattern are diverse; mostly, the limited competition is a result of restrictive local regulations limiting the entry of new providers, caution on the part of agencies emphasizing certain requirements for "qualified" providers, and the often marginal nature of the provider industry, especially taxicabs. As a result, comments regarding the potential effects of competition in user-side subsidy approaches remain largely conjecture.

Second, many of the important impacts on costs are of a more long-term nature. Under both user-side and provider-side approaches, public subsidies for services provided by private operators change the nature of the industry in ways that may alter its structure over time. One example is the increased need to retain experienced drivers as taxicab companies move into shared-ride services which pose more difficult problems for dispatching and responding to calls. That need may fundmentally change the nature of labor-management relations over time. The experience so far is insufficient to predict these effects with adequate reliability.

This section looks in turn at four aspects of private operator provision of public transportation services which are likely to affect program costs significantly: the type and degree of competition; the adminstrative procedures required; the labor-management relationships; and the type and degree of coordination between different services and funding sources.

Competition Between Providers

Both for provider-side and for user-side subsidies, competition between providers can help keep costs down. Since both options base the subsidy amount on the cost per service unit, periodic renegotiation of subsidy rates is necessary. Under provider-side subsidy arrangements, such renegotiation can take the form of reopening bids. However, the limited competition by private providers in many areas means that such re-bids may involve only the current provider. Since provider-side subsidy approaches tend to award the contracts for services in larger quantities, building the capacity to submit a credible bid may be difficult for new operators. The lumpy nature of the procurement acts as a barrier to market entry. The experience with provider-side subsidy mechanisms has shown that actual competition is rather limited.

Under user-side subsidy approaches, competition can take place on a trip-by-trip basis. As noted above, though, interpreting the concept of "qualified providers" too narrowly may have the same impact as the implied minimum-size requirement for competition for provider-side approaches. It may in fact keep new operators out who want to enter the market gradually, perhaps by starting on a part-time basis. In many applications of user-side subsidies, trip-by-trip competition has been virtually non-existent.

The absence of this form of competition under user-side subsidies also precludes anything but conjecture about expected effects in service

differentiation. That is, no efforts to specialize on certain kinds of service -- such as premium services at a higher cost to the user -- have been observed thus far.

In principle, provider-side and user-side subsidies differ in terms of their impacts on private sector operations over a longer time span. Under a provider-side agreement with a single provider, the contract creates a quasi-monopoly for an important portion of the local public transportation market. However, under competitive procurement practices, this quasi-monopoly is limited over time. If effective competition can be brought when the contract is re-bid, the operator cannot be certain that the contract will be renewed. This uncertainty, combined with the lumpiness of the procurement, can affect the behavior of providers and potential competitors. In practice, however, the limited number of bidders has removed much of the uncertainty.

If a user-side subsidy scheme involves effective trip-by-trip competition, the risk to the individual provider is much smaller, since any changes or shifts will be gradual. Such gradual changes allow for sufficient time to respond, by adding capacity or improving service quality. In this dynamic context, a user-side approach in conjunction with a deliberate open market entry strategy creates an environment well-suited to the capabilities of small business.

One common objection to subsidy approaches which encourage regular trip-by-trip competition between public transportation providers is that the existence of multiple providers precludes certain economies of scale in service production. Teal et al. (1980), for example, argue as follows:

> Recent research on other local public services indicates that contracting with a single firm results in significantly lower costs

> than allowing several private firms to compete for the business of consumers. . . . These findings are directly applicable to user-side subsidy SRT [shared-ride taxi]. With multiple providers the economies of overhead sharing are reduced, and the existence of a number of independent production units lessens the opportunity to share rides.

The validity of this argument needs to be tested by further analysis of experience with provider-side and user-side approaches. User-side applications with multiple providers such as those in Montgomery (Alabama) and Lawrence (Massachusetts) should be included in such an analysis. Because service levels may vary between locations, both the benefit and the cost implications of the alternative approaches must be considered. The question here is whether the advantages of central management and greater opportunities for shared ride outweigh the disadvantages of the quasi-monopoly created by single provider contracting. Without much better empirical information, the question cannot be answered definitively.

Administrative Procedures

Administrative costs ultimately depend on the degree of administrative control desired and pursued. That truism is often forgotten in the discussion of administrative options for subsidizing private paratransit services. Any program involving the private sector requires a minimum of administrative effort -- to select the provider(s), negotiate the agreement, process payment requests, maintain records, and respond to any complaints about the service by users or others. Efforts beyond that minimum are directed at achieving greater cost-effectiveness of services through direct management oversight, or through the incentive structure built into the subsidy approach.

A common concern about the user-side subsidy approach is that administrative costs may be excessive because of the need for distributing and processing vouchers, maintaining an adequate audit trail, and guarding against

fraud. In other use-side subsidy programs such as food stamps considerable attention is paid to controlling administrative costs. Provider-side subsidies, on the other hand, are thought to be less costly to administer because monitoring of user participation and provider performance are much simpler tasks. Experience to date with the two subsidy approaches suggests, however, that these perceptions may be incorrect. Provider-side contracts based on in-service hours or in-service miles have required a great deal of administrative effort for both the funding agencies and the providers. And user-side subsidies have rarely encountered the fraud or accountability problems expected by many observers prior to their implementation.

At least one city has switched from a provider-side to a user-side subsidy approach in order to reduce administrative costs. The small city of Hopkins, Minnesota (population 13,000), subsidizes shared taxi services for its residents. The program was initially administered using a provider-side scheme in which in-service hours were recorded by the drivers, checked by the taxicab company owner, and further checked by city staff. The company was then paid at a fixed rate per in-service hour. (In-service hours include only the time during which the taxicabs are occupied by passengers; the driver must record the time when the first passenger boards and when the last passenger alights). This procedure had two major disadvantages: the administrative effort in recording and checking in-service hours was substantial, and the taxicab company had an incentive to maximize in-service hours rather than trips served. In July of 1980 the program switched to a fixed reimbursement rate per passenger ticket, and total costs dropped by about ten percent. Cost savings were realized by both the taxicab owner and the city staff.

The above example demonstrates that user-side approaches may sometimes be

less costly to administer than provider-side approaches. Data on other applications are not currently in a form which permits further investigation of this question. Enough experience has been accrued to pursue this issue, however, if sufficient resources were made available to extract and analyze the data.

A recent finding which bears on the administrative costs of provider-side approaches concerns the use of incentive contracts relating provider compensation to performance. In their study of a number of provider-side arrangements in California, Teal et al (1980) concluded

> . . . incentive systems (especially farebox incentives) have failed to live up to expectations. . . systems in which providers keep the fares achieve, on average, no greater productivities than other SRT [shared-ride taxi] systems.

They also concluded that the more complex incentive schemes may be too costly to administer:

> From the perspective of most sponsors, incentive systems more complex than provider fare retention are simply out of the question. The additional administrative requirements, in terms of manpower and effort, are not worth the perceived payoff.

If this conclusion is borne out by experience in other locations, it will have important implications for the relative performance of provider-side and user-side approaches.

To date, no comparative study of administrative costs under the provider-side and user-side options has been undertaken that controls for administrative output in terms of assuring programmatic and fiscal accountability. Such a study is desparately needed, since pressures for better programmatic accountability are increasing sharply.

Labor-Management Interactions

Shared-ride services make the retention of skilled drivers and dispatchers more valuable to the taxicab operator, since business levels and patterns become

more predictable. Increased interest in retaining them gives labor greater bargaining power in negotiating remuneration. Teal et al. (1980) found some evidence of this type of effect in their sample. While the relatively short experience with user-side subsidies provides little information on the likely impacts on labor-management relations under this approach, the built-in incentive for greater efficiency may place an even higher premium on experience and skills.

If subsidies for paratransit services involve UMTA funds, labor becomes subject to federal labor protection regulations. Specifically, any UMTA funds bring Section 13(c) regulations into play. At this time, 13(c) protection remains a murky area as far as its applicability to employees of private operators is concerned. A major question is whether employees who participate in federally subsidized programs should be protected against the loss of this participation. If the answer to this question is yes, the involvement of private providers could become cumbersome or virtually impossible. Private providers have shown little interest in obtaining 13(c) protection for their employees, since operators apparently would receive no benefits themselves.

Experience to date with 13(c) agreements involving private providers offers some insights into the issues involved. Teal et al (1980) report that in California

> sponsors . . . all have so far managed to finesse the 13(c) issue. . . . Transit agency sponsors have continued to operate under their standard 13(c) agreement with DOL, making no special provisions for employees of SRT contractors

They suggest that any formal UMTA policies on dealing with 13(c) may upset this flexible approach, and create significant labor protection problems for program sponsors.

In other parts of the country special 13(c) arrangements have been made for private providers.[8/] Under a demonstration project begun in Pittsburgh in 1978 several taxi companies are providing subsidized services for elderly and handicapped persons through arrangements with a coordination agency. After investigating the types of services and the revenues associated with each company in 1977, the DOL determined that some of the employees of one company had been providing services similar to those planned for the project and that the project had a "realistic potential of affecting them." It was determined that a minimum of 15 percent of the company's revenue had been produced by the "project type" services, and that individual employees probably had derived a greater percentage of their revenues from this type of service than the company's total of 15 percent. On the basis of this determination the DOL concluded that these company employees, ". . . and any others that may be similarly situated, cannot be excluded from the coverage of Section 13(c)." The DOL ruled that the 13(c) agreement with the transit union should constitute the level of protection for the taxicab employees as well.

The DOL is proceeding on a case-by-case basis in determining which employees should be included under 13(c) coverage. The deciding factor appears to be how much of the employer's business will be "mass transportation" under the proposed project (so called "project type services"). If the proportion is not substantial (a figure of 15 percent has been used on more than one occasion), then the employees will not be covered. If employers rely on project type services for a substantial portion of their revenues their employees probably will be covered, either under their own separate agreement, or (as

8/ Several of these cases are discussed by Kirby and Miller (1981).

in Pittsburgh) under an agreement negotiated with another labor union in the area, or under a standard DOL certification.

In some situations two or more taxicab companies may be competing for the same shared ride customers, either on a day-to-day basis thorugh user-side subsidies or on a year-to-year basis through provider-side service contracts. Where the potential exists for such competition between providers, an UMTA grant recipient will be responsible for protecting workers who may affect each other. Whether the provider-side and user-side approaches have different implications in this regard is unclear. Over time competitive adjustments in user-side arrangements presumably would be fairly minor and might well be outside the normal intent of 13(c) coverage. Provider-side contracts raise the prospect of significant worker dislocations when contracts are re-bid each year. Whether or not such dislocations would come under 13(c) protections appears to depend on the specific language negotiated in each local agreement.

Some 13(c) agreements have attempted to avoid competition between private providers and existing transit by limiting new service to specific areas; dial-a-ride projects in suburban Chicago are an example of this approach. Several of the shared-ride taxi services such as Oklahoma City and Akron restrict the privately provided services to elderly and handicapped users. For dial-a-ride demonstration projects in Rochester, New York, the 13(c) agreement obliged the recipient not to operate the new services in competition with the conventional transit routes. Such restrictions actually limit the services which can be provided with UMTA funds, and may be subject to challenge by UMTA policy-makers. A project currently under development for New York City is being reviewed closely by UMTA to ensure that 13(c) agreements do not unduly restrict the services provided.

UMTA recipients can always avoid the 13(c) requirements and implications, of course, by using only state and local funds for program elements involving private providers. This strategy has been employed, for example, in the Kansas City project listed in Table 1. Almost all cities commit substantially more state and local funding to public transportation programs than is required to match UMTA funds. Consequently, their programs could be divided into two segments: a basic spine system to which UMTA funds are allocated (along with the minimum required state and local match), and the remaining system to which UMTA does not contribute. If private provider involvement is limited to this second segment, 13(c) protections should not be required for the providers' employees.

Coordination of Funding Sources

The diversity of funding programs for public transportation services has given rise to a number of different client groups and subsidized providers in each community. Many observers have suggested that this diversity has led to significant redundancy in service provision, and that administrative efforts to coordinate the different programs at the local level would increase overall cost-effectiveness. Early experience with coordination efforts has been somewhat discouraging however:

> It is an illusion to believe that simply coordinating human service agency transportation and mass transit services for the elderly and handicapped will lead to better utilization of resources. There is not yet any conclusive evidence that cost savings can be attributed to coordinated transportation.9/

Ernst et al (1980) point out that coordination is not a single homogeneous concept but rather an umbrella term for a range of different strategies and techniques. Three major categories can be identified:

9/ Cutler (1979).

- demand management -- restructuring travel demand by users and funding agencies to allow for better utilization of available transportation capacity
- supply management -- restructuring the supply of public transportation services by increasing or decreasing the number and structure of competing providers
- service allocation -- allocating service to users through a subsidy disbursement technique.

Our discussion of alternative subsidy approaches deals with the third category of strategies.

Provider-side subsidies can be employed in coordination projects to select and reimburse providers, typically with pooling of the funding resources of different agencies before disbursement to the providers. The ACCESS project in Pittsburgh is an example of this approach. Rather elaborate administrative procedures are required to assign users to providers and to divide service costs between participating funding sources.

User-side subsidies offer an alternative approach to coordination. Tickets or vouchers are to be made available to funding agencies by a central office, and the agencies sell the tickets to their various client group users at discounts consistent with their own program objectives. The users then purchase services from the providers of their choice, and the providers submit the used tickets to the central office for reimbursement. Finally, the central office bills the agencies for those used tickets which were distributed to them initially. A demonstration of this concept is currently underway in Chico, California (population 40,000).

The implications of provider-side versus user-side subsidy approaches for coordination of different funding sources cannot be assessed from experience to date. Once the results of demonstration projects currently planned or underway become available, however, it should be possible to draw some important

lessons. It seems clear already, though, that both approaches will require considerable administrative effort, and that substantial coordination benefits will have to be achieved to offset the administrative costs involved.

CONCLUSION

A number of U.S. cities of varying sizes have chosen to involve private providers in their public transportation programs. While experience to date has been almost exclusively with on-call paratransit services for special user groups, potential exists for expanding private provider involvement to more conventional transit services for the general public. UMTA's Service and Methods Demonstration Program is currently developing demonstration projects aimed at this conventional transit potential, but as yet no empirical results are available.

The various administrative approaches used to date to involve private providers have been reviewed in this paper under two general categories: provider-side subsidies and user-side subsidies. Conceptually, these two approaches have rather different administrative implications. Provider-side subsidies place control over provider selection and service quality in the hands of the administrative agency: the agency selects and monitors providers through service contracts which typically are rebid at about one-year intervals. User-side subsidies place the provider selection and service quality decisions in the hands of the users of the services: users obtain discounted vouchers and patronize the providers of their choice.

A priori expectations for the provider-side and user-side approaches are that the former should be the easiest and least costly to administer, while the latter should maximize user benefits and, through regular trip by trip competition, minimize provider costs. The practical experience to date is too limited to confirm or refute these expectations definitively. However, the review of experience conducted in this paper suggests some interesting

hypotheses which deserve closer examination:

- With regard to the benefits received by eligible users -- measured in terms of program participation, actual changes in trip-making, and distribution among eligible users -- we could detect no significant differences between the provider-side and user-side approaches

- With regard to impacts on costs due to the type of provider competition, the administrative procedures, the labor protection requirements, and the coordination of funding sources, we found

  - no significant impacts to date on provider costs due to the different types of competition

  - indications that user-side subsidies may be no more costly and perhaps less costly to administer than provider-side subsidies

  - potentially significant differences in labor protection implications, though no actual protections have been invoked to date

  - very different approaches to funding coordination, but no indications as yet of different cost impacts

Overall, experience to date does not reveal any really significant differences in either the benefit or cost implications of the provider-side and user-side approaches. Rather, this experience suggests that the differences in the two approaches may be less significant than was implied by a priori expectations. The empirical information is quite limited, however, in cost detail and in the period of time over which projects have been observed. Since some of the differences expected between the two approaches (such as provider costs and labor implications) may develop slowly over relatively long time periods, continued monitoring of selected projects will be necessary to assess the approaches fully.

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