



The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Proceedings

Thirty-Third annual meeting

Transportation Research Forum (TRF)

Halloween In New Orleans



October 31 -
November 2, 1991
New Orleans, LA

Editor:
Louis A. Le Blanc

**PIECEMEAL PRIVATIZATION OF PUBLIC TRANSPORTATION:
IS THIS THE WAY TO RUN A BUS OPERATION?**

Peter R. Stopher
Director, Louisiana Transportation Research Center
Baton Rouge, Louisiana
(504) 767-9131

Gary S. Spivack
Assistant General Manager, Planning and Public Affairs
Southern California Rapid Transit District
Los Angeles, California
(213) 972-4880

Introduction

The resurgence of conservatism in the 1980s brought with it the notion that many operations, taken over by the public sector since the end of World War II, could be operated more efficiently and at lower overall cost if returned to the private sector. Many of these were operations that had originally been taken over by the public sector for ideological reasons, or that had never been permitted to operate under private ownership. So far, a number of these privatization activities appear to have been quite largely successful.

One sector of the economy that has been included in this thirst for privatization is mass transit. Unlike a number of the operations that have been considered for privatization, mass transit moved into the public sector primarily because of the loss of profitability of the operation in the post-World War II years, and its impending disappearance from many urbanized areas around the world. Stopher (1988) describes briefly the history of urban mass transit and makes the point that this is an operation that began as a profitable private-sector activity, became unprofitable but was deemed necessary to many urbanized areas, and was subsequently taken over by the public sector. Under public ownership, it has continued to show unprofitability and the need for subsidies from public coffers.

The assumption behind the concept of privatization is that the private sector can provide any service or product more efficiently than the public sector. The application of this concept to mass transit has very clearly been made on the expectation that the private sector can provide the same service at lower cost, thereby reducing the burgeoning subsidies required to operate mass transit. There are a number of aspects of this assumption that this paper seeks to call into question.

First, the question is raised as to whether private sector operation is more efficient than public sector operation, particularly in the area of mass transit. Second, the paper considers whether the actions currently being taken in the U.S. mass transit marketplace really are privatization. If not, then the question of whether there are benefits to be obtained from the procedures being undertaken should be examined. The third issue considered is whether the measures that are applied to mass transit to determine who shall be the operator are good measures of efficiency. Even if the first two assumptions are correct, the best private operators may not be selected unless the selection process uses measures that relate clearly to efficiency. Fourth, the paper considers where current mass-transit privatization procedures are leading and questions whether this represents a future for mass transit that is likely to be an acceptable or desirable one.

Public versus Private Ownership and Efficiency

The basic argument for privatization is that the private sector can provide the same service at greater efficiency than the public sector. Stephens and Nolan (1988) point out that this is a significant over-simplification. While their points are not repeated here at length, they make some important statements that should be considered further here.

Two aspects (at least) of efficiency that are relevant to a discussion of the properties of private and public operation of mass transit are productive and allocative efficiency. Productive efficiency is defined within the operation itself and represents the basic concept of "getting the most for one's money." Hensher (1987) points out, economics has established that maximizing output subject to a cost constraint produces the same result as minimizing cost subject to production constraints. Thus, productive efficiency relates to the notion of getting the best value for what is spent.

Allocative efficiency, on the other hand, relates to the environment of this particular operation, and is concerned with the allocation of resources among alternative uses in the production of goods and services. Allocative efficiency is achieved when resources are allocated among competing uses such that a change in allocation would not make someone better off, without also making someone else worse off (Stephens and Nolan, 1988). Economics demonstrates that the condition for allocative efficiency is that prices should reflect the marginal cost of production. In a perfectly competitive market, in which producers maximize profit and consumers maximize satisfaction, allocative efficiency will automatically result. When the market is not perfectly competitive, and producers do not use marginal costs to set prices, then allocative efficiency will not normally result. The situation for urban mass transit is clearly one in which the market is not perfectly competitive, and prices are not set to reflect the marginal costs of production of the service. In fact, mass transit is about as far as possible from a perfectly competitive, marginally-priced situation, given that it is predominantly a monopolistic operation in which fixed fares are charged for use of the system.

Privatization proponents argue primarily that private ownership will increase both allocative and productive efficiency. Stephens and Nolan (1988) examine these arguments at length. First, they conclude that the likelihood of allocative efficiency increases are very

slender, because privatization generally involves the transfer from a public to a private monopoly. The continuing provision of public subsidies to the private operator almost guarantees that no significant change will occur in allocative efficiency. Second, empirical evidence with respect to both allocative and productive efficiency is mixed. There is no clear indication that private operation of urban mass transit produces efficiency gains.

Third, the arguments for increases in productive efficiency under private ownership are grounded principally in the notions of profit motive, bankruptcy, and takeovers. Stephens and Nolan (1988) argue that these notions are either irrelevant to the issue of private ownership of urban mass transit, or are overstated in their potential effects on productive efficiency. From these arguments, one should not draw the conclusion that privatization will not lead to increases in the efficiency of urban mass transit. It is not ownership, *per se*, that dictates increases in efficiency, but is instead a function of a number of other factors that can be changed under either public or private ownership.

An additional concern that should be raised in this discussion relates to the environment for mass transit. Allocative efficiency arises when products and services are priced at their marginal cost. Transit service has generally not been priced at marginal cost in this country. On the other hand, the primary competing alternative -- the private automobile -- is also not priced at marginal cost, in at least two respects. First, auto users do not pay the real costs of the provision of the facilities they use. Although the federal and many state governments have transportation trust funds associated with gasoline taxes, many elements of the provision of road space and operating facilities are provided out of other funding sources, which are not necessarily paid for by the auto user and are not paid for in proportion to use. Furthermore, parking is extensively subsidized. As long as the auto user does not pay marginal costs but receives major subsidies for auto use, there will be no allocative efficiency in the transportation market.

In conclusion, the expectation is unlikely to hold true that privatization alone can lead to increases in both allocative and productive efficiency. Rather, improvements in efficiency could very probably be obtained under either public or private ownership.

Definitions of Privatization

Over the past few years, the term "privatization" has been used extensively to describe a variety of different situations or activities involving relationships between the private and public sectors. Kay, Mayer, and Thompson (1986) describe three primary strategies within what has generally become to be referred to as privatization:

- transfer of ownership from the public to the private sector of an entire industry, also referred to as denationalization;
- liberalization or deregulation to promote competition or competitive behavior, particularly in activities or industries that have been reserved to a government monopoly; and
- contracting out public services to the private sector.

The distinctions among these actions are important. Transfer of ownership does not necessarily imply deregulation and may often be accompanied by even more restrictive regulation. Similarly, deregulation may not be accompanied by any form of transfer of ownership or contracting out, as happened in the deregulation of the U.S. domestic air market. Contracting out may also involve increased regulation, similar to transfer to the private sector; but it does not involve a change in ownership. Rather, as Lave (1985) points out, contracting out represents a process of shifting roles, such that the public sector continues to be the *provider* of public transit services, but not necessarily the *producer*.

Privatization of urban mass transit is firmly anchored in the third of these alternative strategies, i.e. contracting out services to the private sector. Furthermore, the services contracted out are generally selected fairly carefully from the set of services currently provided by the public operator. Lave (1985) points out that the issue, as already noted in this paper, is not so much ownership as it is competitiveness. A private sector monopoly in any sphere will likely be as inefficient and unresponsive as a public sector monopoly. This was shown by the mass transit industry, where the private owners of the early 1900s became as inefficient and unresponsive by the mid-1950s as the public operators were accused of being by the 1980s. Therefore, the question is whether contracting out produces competition, where it has previously been absent.

Seeking operating bids for various transit routes should result in the creation of a degree of competitiveness. However, two issues are particularly important here. First, unless the market is opened to permit independent services to be offered, competitiveness is likely to exist only briefly, while the services are offered for contract bids. If contracts are awarded for a period of one to three years (typically tending more to three years than one), the selected bidder will be granted an effective monopoly for the contract period.

Second, competition is also contingent on the appropriateness of the measures used to select the successful bidder. The mass transit industry is somewhat notorious for the difficulty of arriving at suitable performance indicators. Even under pressure from Congress in response to burgeoning subsidies to the transit industry, the Urban Mass Transportation Administration (UMTA) has had difficulty in arriving at a reasonable and appropriate set of performance indicators. In this context, it is plausible to suppose that the indicators used to select among alternative bidders may not necessarily produce the most efficient operator. An additional complicating factor involves the extent of services provided. In comparing the costs between the public and private sectors, it is important to ensure that the costs of the exact same services are being compared. If the private operator does not have responsibilities for planning, bus stop location, routing, service measurement, policing, etc., while the public provider does, then great care must be taken to exclude these additional products from the costing of public service.

In conclusion, contracting out service to the private sector does not guarantee the introduction of real competitiveness into a previous public monopoly. Rather, it may simply be an alternative way of maintaining the same monopoly, albeit with some change in the overall cost structure. There is clearly no guarantee that improvements in efficiency will be achieved by contracting out some portions of service. Furthermore, contracting out

those services that are most likely to be attractive to the private sector, because of potential profitability, is likely to reduce further the efficiency of the public operator left to operate those routes that are the least profitable or generate the greatest loss.

Measuring Efficiency

The procedure of contracting out specific pieces of service leads to piecemeal privatization, with the stated objective of lowering costs and reducing federal subsidies. The extent to which this will actually happen depends first and foremost on the efficacy of the procedure that is used to determine the most efficient service operator. In this section of the paper, we examine first the current procedure used to determine who shall be the operator of a specific piece of service. Second, we report some evidence from several localities to determine if there is empirical evidence to suggest that the method works.

The Fully Allocated Cost Method

The method specified by UMTA for cost comparisons between public and private operation utilizes a "Fully Allocated Cost" (FAC) methodology. This method usually favors the private operator's costs and ignores some of the true costs of contracting out. The method also raises issues of how to measure the output of providing mass transit services and the extent to which the method measures a relevant output.

A Fallacy of FAC

The enticing aspect of the FAC methodology is its simplicity. It requires an existing or prospective operator to state total cost in terms simply of cost per bus, or cost per unit of service (e.g., revenue hours). This requirement would be appropriate if it accounted for the differences in costs between operators and for differences in the type and complexity of operation. By being defined as the operator's *total* costs, prorated to a unit of service, numerous inequities and fallacies are incorporated. In addition, the goal of reducing cost is frequently not met at the local level, as the following discussion points out.

In strict economic terms, cost per revenue hour works as a measure of output. However, it does not reflect the benefit received by the public as measured by the number of passengers carried or the utilization of vehicles in passenger miles. All too often, a bus carrying 60 passengers per hour at an operating cost of \$80 per revenue hour is viewed as "bad," while one carrying 20 passengers per hour at \$60 per revenue hour is considered "good." This lopsided view values cost over the delivery of service to the passenger.

Capital Costs - Current methods of cost comparison can generate inappropriate results as shown by the following example on capital costs. Consider the comparative costs for a large public and a small private operator competing for a segment of the public operation. Assume that the public operator services a large area with 200 buses out of a five-year-old remote facility. Current UMTA rules define the annualized costs per bus as shown in Table 1.

Table 1
Annualized Costs for a 5-Year-Old Facility

| Cost Item | Cost |
|---|---------------------------|
| Facility Construction Costs Divided by Useful Life of 30 Years | $\frac{\$12,000,000}{30}$ |
| Annual Depreciation | \$400,000 |
| Annual Depreciation/Number of Buses | $\$400,000/200$ |
| Annualized Cost per Bus | \$2,000 |

Suppose that the private operator bids to privatize half of the service (100 buses) operating out of this facility. Under the FAC procedure, facility annualized costs used for comparative purposes would be 100 multiplied by the annualized cost per bus, i.e., \$200,000. A private carrier, not concerned with service delivery in the remainder of the public operator's service area, could bid to provide the services of 100 buses with a much lower annualized cost per bus of, say, \$1,000. This would provide a total annual facility cost of \$100,000, indicating that the private operator would provide annual capital cost savings of \$100,000 in facilities costs alone.

There are two fallacies in this use of the FAC. The first relates to cash-flow implications. On the one hand, the capital costs of the facility were absorbed prior to privatization considerations. Therefore, these costs should be considered as "sunk" costs, and should not be considered part of current bus costs. However, if they are considered in the cost equation (as UMTA specifies), then it is incorrect to assess the privatization option as having only the costs of \$100,000 for bus facilities. For at least the first year of privatization and possibly much longer, the public operator continues to have a cost of \$200,000 per year that cannot be offset, unless a portion of the facility can be sold or converted to some revenue use. Therefore, there is actually an increase in capital costs under privatization of \$100,000, rather than a potential savings of \$100,000.

The second fallacy arises from current policies, under which UMTA requires repayment of its share of the costs for facilities that are removed from transit service prior to completion of their useful life. Table 2 shows the repayment calculation for this example, assuming privatization for the services of 100 buses. Not only could this cash repayment scenario be devastating to most public operators, but also it is fallacious to exclude these costs in the assessment of the worth of privatization.

This scenario creates a paradox. While the repayment scenario is in line with the intended outcome of reduced long-term costs, i.e., reduced federal subsidy, the short-term costs, and possibly the local long-term costs, are far from reduced. In this example, the annual cost savings of \$100,000 does not represent an acceptable return on investment

to amortize the repayment costs for the unused facility. At a 0 percent interest rate, it would take 40 years to amortize the local repayment expense with annual savings of \$100,000. Even more significant is the fact that the \$4 million repayment would come from scarce local funds and the imposed amortization of these funds not only transfers the poor return on investment to the local government, but imposes an ominous, though unintended, burden on public mass transit providers.

Table 2
Repayment Calculation for a Capital Facility

| Item | Cost |
|---------------------------------------|--------------|
| Facility Cost | \$12,000,000 |
| 50% Removed from Service | \$6,000,000 |
| Value of Remaining Life (25/30*Row 2) | \$5,000,000 |
| 80% Federal Share of Remaining Life | \$4,000,000 |
| Cash Repayment to UMTA | \$4,000,000 |

Even when cost repayment is not pursued, the increased cost to the public operator for continued facility operation at a greatly reduced efficiency is not accounted for in the comparative FAC methodology and, therefore, does not reflect the real costs of privatization. When the public operator is required to transfer a few lines from an operating division to a private concern, the overhead costs for operating the facility for the remaining buses must be absorbed by the public operator, while the private operator receives the credit for lowering costs. In effect, the public operator bears the burden of an inefficient facility, worsening its cost performance for the remaining publicly-operated lines. In the long term, these effects may be able to be reduced, if buses can be relocated to other facilities and the operating division that has been most impacted by privatization can be closed and sold. However, it is likely that such route transfers will increase costs due to longer deadheading to the commencement of service, and other operational inefficiencies.

If such costs as these are taken into account in the methodology for comparing private and public operations, then there is a possibility that the goals of privatization can be met. However, current piecemeal privatization procedures do not take these costs into account and will lead to a worsening of the efficiency of the public operator.

Operating Costs

In the area of labor costs, the FAC methodology will not lead to a short-run reduction in local costs of service, and may also fail in the long run. Public mass-transit providers are generally heavily unionized with work rules that restrict the use of part-time drivers. As a result, private operators frequently bid successfully for a lucrative peak-hour suburban

service, because they are able to offer significant bus operator cost savings through the use of cheaper, non-unionized labor. The perception that the private operator can offer cheaper service is not reflective of the real costs of privatization as currently achieved.

Current UMTA regulations do not allow the public operator to drop the labor costs coincident with the hand-over of service to a new private operator. Public entities receiving federal assistance are not permitted to abandon or transfer service and simply lay off the corresponding personnel. These personnel must continue to be carried in the system into the next budget cycle, or be paid additional compensation in lieu of being retained. In either case, the public carrier is required in the short run to incur additional cost and inefficiency, to permit the private carrier to take over service. In the longer run, the nonunion drivers of the private operator are likely to unionize and to demand parity with their public-sector counterparts in both rates and work rules. Thus the principal cost advantage may evaporate over a relatively short period of time.

Differences in regulation lead to other distortions in the comparison between private and public operators. For example, public operators receiving subsidies from UMTA are not permitted to use buses purchased with these grants in charter service. A private carrier using public monies through contract may enhance his profits by chartering idle buses, and the profits used to reduce the total costs in the FAC methodology on the private side, while such cost reductions are not available to the public sector.

In many cases, there are initial "start up" costs that are borne by the public operator that are not included in the operating cost comparisons presented by private-sector competitors. The routes being bid on were planned, delineated, scheduled, and maintained at public cost. Among the specific publicly-borne start-up costs of privatization that are not addressed in the comparative costs are:

- Costs of consultant studies;
- Agency staff costs for analysis and review of proposals for privatization;
- Legal and litigation costs leading to establishing private operations; and
- Costs for monitoring and administering the privatization program.

Private operators also incur costs that are not part of a public operator's costs (American Bus Association, 1987). In fairness, these must be included in the private operator's estimates of costs, or competitive pricing is further distorted. These costs include:

- Depreciation on vehicles and capital facilities;
- Financing of vehicles and capital facilities;
- Local, state, and federal business and income taxes;
- Vehicle license and inspection fees; and
- Fuel taxes.

A solution may be for privatization efforts to consider a free market approach where routes are "sold" as they are between airlines or rail companies. This would reduce the need for accuracy in accounting for total costs per route or route increment to be

privatized and would spread the risk to bidders, because they would have to absorb costs based on their calculations of profit potential. Under the current scenario, appropriate comparison factors are needed but remain elusive.

Measuring Efficiency by Costs per Hour

In the piecemeal privatization environment experienced most frequently, a principal tool of cost comparison is cost per hour. Unfortunately, costs per hour can be as misleading as unadjusted fully-allocated costs. The San Diego Metropolitan Transit Development Board (MTDB) (Schumacher, 1990) has spent much time and effort on attempts to develop cost allocation models that compare public and private operator costs realistically. The models were used for several years, but did not solve MTDB's problems. The models often produced questionable results due to data inaccuracies. Key failures were underestimating public operator costs and highly questionable accuracy of private sector costs. A contingency factor of 20 percent was both added to and subtracted from the private sector model estimates in an unsuccessful attempt to correct private sector data.

For example, the model was used to determine if two existing routes could be operated by private carriers at lower costs. The model indicated that private sector costs were lower, but the overall costs to MTDB were higher if the service was contracted out. In a subsequent re-examination of the situation not utilizing the cost-allocation model, analysis indicated that San Diego Transit could operate the lines at a cost savings (Schumacher, 1990). San Diego eventually scrapped its attempt to correct the cost-allocation methodology on the basis that it was not an acceptable alternative to deriving real cost comparisons through actual competitive bidding. However, San Diego's largest bus operator, San Diego Transit had a 1990 fiscal year cost per revenue mile of \$3.73 with only 40 percent of all the regional routes, 69 percent of the revenue miles, and 88 percent of all passengers. These statistics would indicate that, while San Diego has been in the privatization business since 1971 (and therefore is a region with one of the longest histories of piecemeal privatization in the U.S.), it still accepts seemingly high costs per revenue mile over attempts at piecemeal privatization in an unacceptable, non-cost-effective manner. Further, the imbalance between passengers carried, revenue miles, and routes operated indicates that cost per revenue mile is not an effective measure of service delivery.

Another illustration of problems with costs per revenue hour and other statistics is provided by examining some costs derived from the Southern California Rapid Transit District (SCRTD) and the Foothill Transit Zone (FTZ), a private operator within the service area of the SCRTD. Table 3 shows several comparisons between the costs of the SCRTD and the FTZ's operator (Rubin, 1990). As can be seen, half of the statistics in Table 3 would indicate SCRTD and half the FTZ as the lower cost operator. This points up the dilemma of the appropriate measure to use to assess efficiency of operation, and shows the way in which different, quite plausible measures can lead to opposite conclusions.

A similar dilemma was shown in a recent audit completed for the Regional Transit District of Denver, Colorado (KMPG Peat Marwick, 1990). In this audit, the auditors found that a "Fully-Allocated Cost Analysis" showed potential savings to the RTD from privatization,

both on cumulative costs over a five-year contract term and on the basis of estimated stable-year costs. However, on an incremental cost analysis, cumulative five-year costs and stable-year costs each showed savings from privatization, while a cash basis analysis showed a loss from privatization. In support of some of the earlier statements of this section, the audit document states:

"RTD's experience to date indicates that, for low productivity routes, transit service contracted to the private sector can result in lower long-term public subsidy than service provided by RTD. In the short-term, however, there were real costs to RTD during the initiation of privatized services in contract administration and operational oversight, and mandated consultant studies. Further, despite careful selection of potential contractors, and intensive oversight, some contractors experienced severe start-up problems and quality of service suffered in the initial months of operation (KMPG Peat Marwick, 1990)."

Table 3
Comparison of Various Cost Measures Between Public and Private Operators in Southern California

| COST MEASURE | SCRTD | FTZ |
|------------------------------|---------|---------|
| Operating Costs/Revenue Hour | \$75.91 | \$76.79 |
| Operating Costs/Revenue Mile | \$6.05 | \$2.96 |
| Subsidy per Passenger | \$0.695 | \$1.921 |
| Subsidy per Passenger Mile | \$0.174 | \$0.083 |

The audit also notes that the private contractors lost money in providing the services at the agreed contract prices. Therefore, there is uncertainty both in the prices at which future contracts would be offered by the private sector, and on the existence of future savings to the public sector. It also notes that there were problems with lower performance on some performance measures by all contractors. Presumably, achievement of satisfactory performance on these measures would also result in higher private costs. The audit is also noticeably silent about patronage before and after privatization on the privatized routes. It does provide information on passenger complaints, which show some interesting differences between RTD and the private contractors.

The metric of efficiency used by RTD is also costs per revenue hour. From the audit, it appears clear that this statistic is again called into question, because the results of privatization do not provide an overwhelming case that increased efficiency has been achieved, and there is a lack of evidence on whether or not the service has been maintained or improved concomitantly with the cost per hour savings.

Furthermore, the policy interest appears to be lost in the process. Nowhere is there an equalizer for comparison of purveyor's ability to provide for publicly-mandated service. By piecemealing routes for privatization, the true costs for fulfilling public mandates are not considered because these costs are spread over the whole system. The public purveyor, while concerned with cost-effectiveness, must deal with other issues that do not necessarily concern themselves with costs per unit of service. Deciding how to compare public and private costs fairly presents many serious problems for decision makers.

The Future

It seems clear that the paradigm of piecemeal privatization currently creates a distinct market segmentation within mass transit provision. Those routes most likely to be privatized are express routes from suburban areas to major employment centers, often heavily patronized by middle and upper income workers, and by those in white collar occupations. A second potential group of routes being privatized are those that provide such functions as downtown collection and distribution, also with a tendency to a middle and upper income clientele. In contrast, those routes remaining under public sector operation are most likely to be those that are providing a social service, offering transportation to segments of the population that have little or no alternative to the use of mass transit.

By the nature of the former routes, where the predominant rider is a choice rider who can choose between use of transit or a car, the privatized routes are likely to offer a premium quality of service and may be able to demand and receive a higher fare, commensurate with premium service. With the emergence of Trip Reduction Strategies on commute trips, there is also much greater potential for employers to subsidize fares for those using privatized routes, who are most likely to be employees working at locations where parking subsidies have been offered routinely, and who are therefore the most likely to have transit subsidies made available. These employer-based subsidies of work trips on transit and the ability to pay for premium service are likely to ensure the future economic and operational viability of these services. Furthermore, there is major potential for the operator's farebox recovery ratio to be increased significantly on these routes.

Those routes remaining under public sector operation are more likely to be routes requiring increasing public subsidies, because their primary clientele are unable to afford significant fare increases, and the mandate to the public operator to provide these as a public service has been made clear. A declining farebox recovery ratio is likely for these services, together with a concomitant reduced ability to invest in improved or updated capital equipment. Indeed, the public sector is likely to be confronted with an increasingly aging and deteriorating vehicle fleet, without the ability to update and replace vehicles as needed, and certainly without the capability to improve quality as time goes by.

It is likely that the future of mass transit under piecemeal privatization is one in which there is an increasing polarization within the system, resulting in two distinct types of service. One is routes serving the more affluent rider, very probably involving higher levels of service, newer vehicles, and amenities not often found on mass transit in the past few decades; and the other will be routes serving those who are captive to transit, by

virtue of location and lack of an available auto, often using older vehicles, with low levels of service, and few amenities. The latter service will also likely only continue to exist to the extent that there is a willingness to continue to provide increasingly large subsidies to those systems that are only partially privatized.

References

American Bus Association, *Potential for Optimizing Public Transit Service through Competitive Contracting*, Report prepared for the Urban Mass Transportation Administration, U.S. Department of Transportation, Washington, D.C., May 1987.

Hensher, David A., "Productive Efficiency and Ownership of Urban Bus Services," *Transportation*, 1987, Vol 14, pages 209-225.

Kay, T., C. Mayer and D. Thompson, *Privatisation and Regulation, the U.K. Experience*, Clarendon Press, Oxford, England, 1986.

KMPG Peat Marwick, *Performance Audit of Privatization of RTD Services*, Final Report to the Regional Transportation District, Denver, Colorado, December, 1990.

Lave, Charles A., "The Private Challenge to Public Transportation -- An Overview," in *Urban Transit: The Private Challenge to Public Transportation*, edited by C.A. Lave, Pacific Institute for Public Policy Research, San Francisco, CA, 1985, p.13.

Rubin, T., *Report to Neyhart, Anderson, Reilly and Freitas*, SCRTD Controller/Treasurer, June, 1990.

Schumacher, David E., *Transit Cost Allocation and Financial Forecasting: An Update on the San Diego Approach to Provide Service Through Competition*, San Diego Metropolitan Transit Development Board, San Diego, CA, April, 1990.

Stephens, Mescal and Anne Nolan, "Privatisation: A Wider Perspective," *Forum Papers Volume 1, 13th Australasian Transport Research Forum*, Christchurch, New Zealand, July 1988, p.57.

Stopher, Peter R., "Privatisation of Urban Mass Transport: A Dissenting Viewpoint," *Forum Papers Volume 1, 13th Australasian Transport Research Forum*, Christchurch, New Zealand, July 1988, pp. 19-33.