

Mass Transit Subsidies: Are There Better Options?

By John Gruenstein*

*Charlie handed in his dime at the Scollay Square Station,
And he changed for Jamaica Plain.
When he got there the conductor told him,
"One more nickel!"*

Charlie couldn't get off of that train!

— The MTA (Metropolitan Transit Authority) Song
by Bess Hawes and Jacquelyn Steiner,
copyright 1948.

Like poor Charlie, doomed to ride forever neath the streets of Boston in a popular song of the 1960s, Philadelphians had to ante up another nickel to ride local buses, trolleys, and subways on January 1. Commuter rail fares are up as well. But although fares have continued to rise for the past fifteen years, they haven't risen enough to pay the costs of mass transit.

While most transit costs used to be covered by receipts from passengers, today the coins that jingle into fare boxes pay only about half the operating costs of getting from here to there and a far smaller portion of the capital costs. The rest comes from Federal, state,

and local governments, which spend vast and ever-increasing sums of tax money to stop the transit passenger from joining the passenger pigeon as an extinct species.

Thus transit subsidies and capital grants have become significant budget items for governments at all levels. Now, with dollar gasoline becoming a reality and long lines at filling stations fraying consumers' nerves, many observers are arguing that mass transit is an idea whose time has come—or come back. Together with environmentalists, the urban lobby, and others who are concerned with helping people who can't travel by auto, they are urging government to strengthen its commitment to mass transit, perhaps with money siphoned away from taxes on petroleum products. But such an expansion of subsidy programs could run headlong into another trend—the tax-revolt movement highlighted at the state and local level by California's Proposition 13 and at the Federal

* John Gruenstein joined the Philadelphia Fed's Department of Research in 1977. Trained in economics at MIT and the University of Pennsylvania, he specializes in urban and regional issues. Mr. Gruenstein commutes to work every day on SEPTA's Chestnut Hill East commuter rail line.

level by the Administration's efforts to trim the budget deficit.

Is government involvement on the current or an expanded scale justified? And if so, will giving subsidies to transit systems get the greatest return for the limited funding available? It may be that the carrot approach alone—transit subsidies—doesn't offer the most effective or the most equitable way to achieve the benefits linked to increased mass transit ridership. What is needed, some argue, is something of the stick approach—measures to reduce auto use directly.

HOW GOVERNMENT INVOLVEMENT GREW

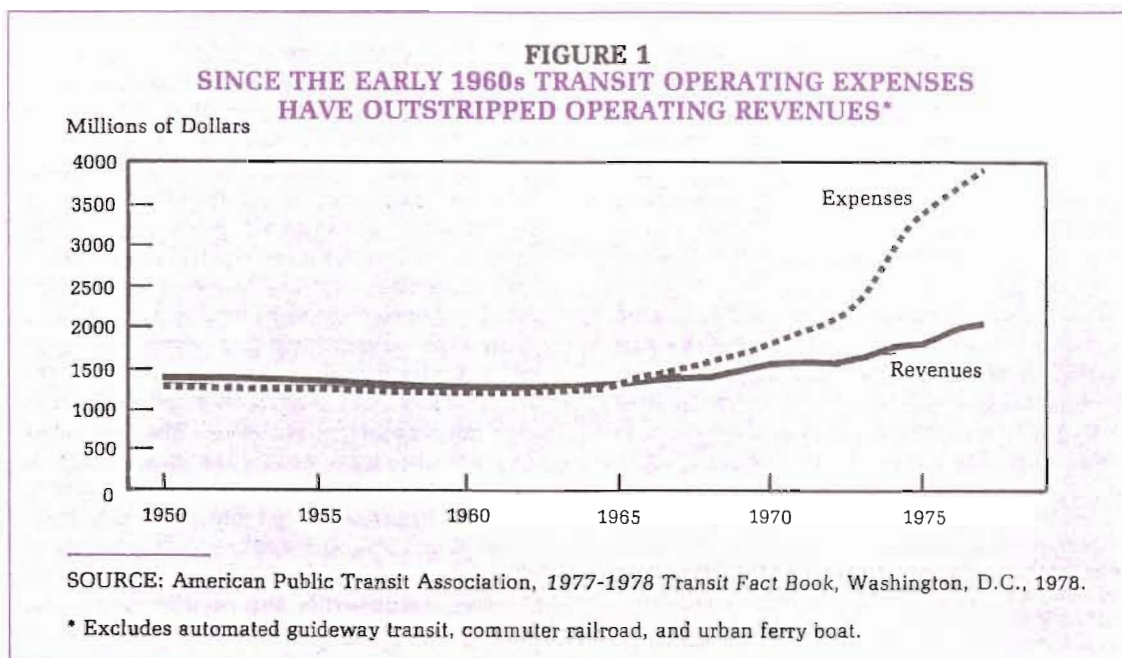
Government became involved with transit systems when a drastic loss of ridership coupled with rising expenses put many lines in grave financial difficulties. Since about 1920, people increasingly have chosen to make trips in private cars rather than on buses, trolleys, and trains. The result has been a decline in transit passenger trips from

about 14 billion per year in 1926 to under 6 billion per year in the early 1970s.¹

In the years immediately following World War II, falling ridership was offset somewhat by large fare increases, so that total passenger revenue dropped less sharply than total ridership. But expenses kept rising, first eroding profits and then creating large operating deficits (Figure 1). As the situation worsened, government stepped into the breach. Reacting to cries that mass transit was a necessary public service, local governments began to buy out many privately owned transit lines and to make up the deficits out of general revenue.²

¹American Public Transit Association, 1977-1978 *Transit Fact Book*, Washington, D.C., 1978. These figures exclude commuter rail trips, charter trips, and trips paid for with transfers.

²Between 1948 and 1977, the percentage of operating revenues accounted for by publicly owned systems jumped from 25 to 90. See George M. Smerk, *Urban Mass Transportation* (Bloomington: Indiana University Press, 1974), p. 141.



Supporting transit was an expensive proposition for cities, even with state aid. So, in the 1950s, urban politicians, businessmen, and other interest groups began to lobby the Federal government to provide assistance. In the forefront of the effort were Philadelphia mayors Joseph Clark and Richardson Dilworth, Philadelphia Congressman William Green, and New Jersey Senator Harrison Williams. They argued that the Federal government had helped create the urban transit crisis by building the Interstate Highway System. This toll-free system, they claimed, financed as it was by gasoline tax revenues, greatly stimulated the use of automobiles and the suburbanization of people and jobs, thereby decreasing the demand for transit.

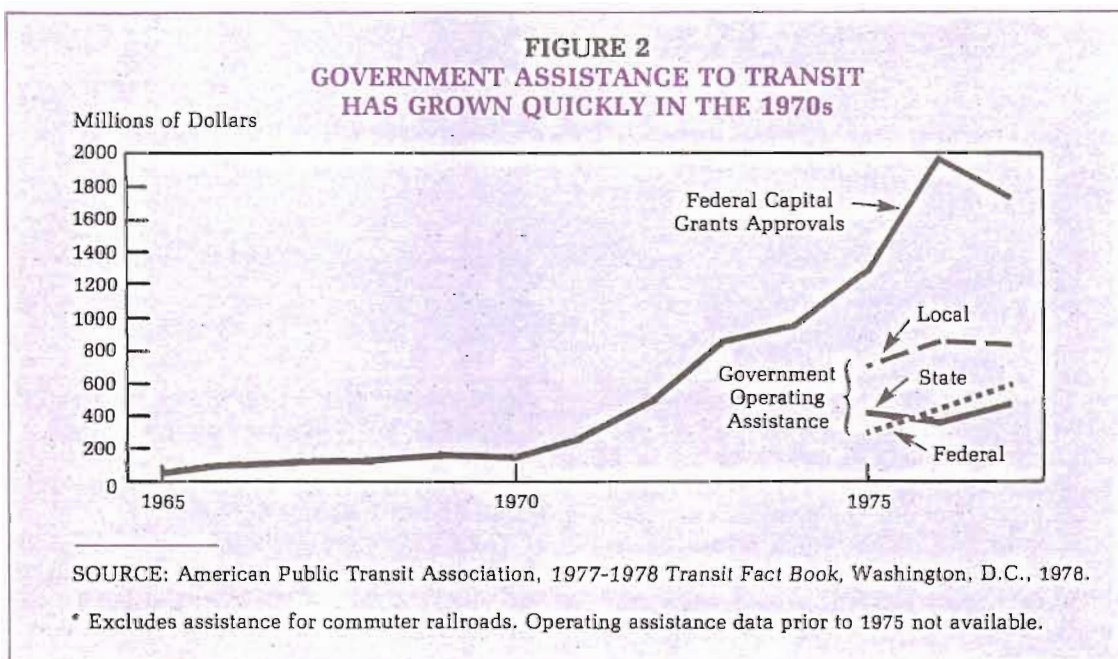
By the 1960s, this lobbying effort had begun to bear fruit. Federal legislation provided planning, demonstration, and capital grants and loans to mass transit, as well as mandating transit's inclusion along with highways in local transportation plans. In 1968 the Urban Mass Transportation Admin-

istration (UMTA) was established, pulling together transit programs that had been scattered among several agencies.

During the 1970s, Federal programs for mass transit have grown enormously. Total approvals for capital grants have increased more than tenfold since the beginning of the decade, from about \$130 million to over \$1.7 billion (Figure 2). Federal operating assistance has about doubled since it was approved in 1974, rising from \$300 million to over \$600 million. And the Surface Transportation Act of 1978 authorized outlays for all purposes of about \$3 billion dollars per year for the next five years.

So, as ridership has declined, government at all levels has rallied to support mass transit with growing infusions of tax money. Nationwide, total transit subsidies and grants from government reached about \$4 billion in 1977. But now major cutbacks are looming over the horizon (see *TRANSIT IN THE DELAWARE VALLEY* overleaf).

To those who want to wind down govern-



TRANSIT IN THE DELAWARE VALLEY

Delaware Valley residents have long taken pride in their region's extensive mass transit network. But the same forces that cause problems for transit elsewhere are at work here, and the combined bus, subway, trolley, and train system run by the Southeastern Pennsylvania Transportation Authority (SEPTA) relies heavily on government subsidies for its capital improvements and day-to-day operations. And the prospects for continued subsidization are highly uncertain.

Capital Improvements. Between 1965 and the beginning of 1978, the Delaware Valley region received a total of \$624.6 million in capital grants for mass transit projects. Just under 75 percent of this total came from the Federal government, with the rest flowing from state and local treasuries. On the basis of past funding, the Delaware Valley Regional Planning Commission has projected that somewhere between \$1.2 and \$2.4 billion will be available for mass transit capital improvements between 1977 and 2000.* But this depends on the willingness of governments to come up with these funds. In the past, even with high Federal matching ratios, nonavailability of state and local money has imposed a constraint on capital spending. And efforts to curb government budgets could well reduce the availability of state and local dollars still further.

Operating Deficits. Some SEPTA operations run on rails, others on streets, but they all run in the red. Passenger revenues will account for just under half of the \$296 million budget approved for 1979. Government funding of the rest has been forthcoming in the past, although often with great uncertainty until the last minute. But funding levels have not been large enough for adequate maintenance of equipment, and this shortfall, combined with numerous other problems, has led to poor quality service.

The squeeze almost certainly will tighten. In a February 1979 report on the state of SEPTA, the outgoing chairman of the board, John W. MacMurray, states that "SEPTA is at the end of a period of rapid increase in government subsidies."† He notes that although Federal funds authorized for SEPTA through 1982 under legislation passed in 1978 show year-to-year increases, amounts actually appropriated by Congress and requested by President Carter for future years show decreases. He concludes that "this uncertainty of the Federal funding for SEPTA's operating budget reflects the conflicting Federal interests of better support for mass transit and lower Federal spending."

*Delaware Valley Regional Planning Commission, *Capital Funding of Transportation in the Delaware Valley Region* (June 1978).

†John W. MacMurray, *Report on the State of SEPTA* (February 1979).

ment subsidy programs, it seems illogical and unfair that transit patrons should pay fares for round-trip rides that cover less than one-way costs. They argue for more reliance on user charges for government services where possible, which would mean higher fares and lower subsidies for mass transit. But others have argued that mass transportation benefits many members of society in addition to the riders themselves and that

these widely distributed pluses tip benefit-cost ratios in favor of subsidized transit.

WHY SHOULD GOVERNMENT HELP PAY THE MASS TRANSIT BILL?

Both efficiency and equity considerations provide a basis for government subsidization of mass transit. 'Efficiency' refers to the overall economic welfare of society, 'equity' to the distribution of the goods and services

providing that welfare.³

To Reduce Spillover Costs from Autos.

The strongest efficiency case for subsidizing transit comes from its ability to reduce costs from automobile usage which spill over onto society as a whole. Such costs are not fully taken into account by individual drivers, so additional inducements are needed to cut driving and stimulate transit use. Reductions of these auto costs count as transit benefits which accrue to everyone and therefore are efficiency gains.

The most important examples of these spillovers are air pollution, highway congestion, and energy use. Automobiles generally spew out more pollution per passenger mile than other forms of transportation.⁴ Thus with every driver who can be induced to use transit, the level of air pollution will drop. Subsidization, leading to lower fares and better service on mass transit, can help effect such a shift, yielding benefits to society as a whole. Similarly for highway congestion: each car entering a congested highway slows everyone else down. So determined highway users should be willing to subsidize transit to

divert less dedicated drivers into buses, subways, trolleys, and trains.⁵ Finally, mass transit uses less energy per passenger mile than automobile travel. So, if conserving energy is a national goal which is in everyone's interest, then again each person who can be induced to ride transit rather than drive provides a distinct social benefit.⁶

To Promote Development. Straddling both efficiency and equity is the argument that transit lines should be subsidized because they promote the economic and residential development of the areas they serve. It is true that such development can provide better jobs and housing opportunities to consumers, increase sales and reduce costs for business firms, and raise land prices for real estate owners in the vicinity of the line. But by the same token, the presence of transit lines in one area may put locales that lack transit at a relative disadvantage and thus cause them to suffer economic losses.

So for a net efficiency gain, any beneficial development near the line needs to more than balance losses elsewhere. The total change in land values resulting from a transit im-

³If government action can increase the size of the economic pie available to everyone—if the aggregate benefits outweigh the aggregate costs—then such action is said to be justified on efficiency grounds. Equity considerations enter when the pieces of the pie are being handed out. If government alters the distribution of big and small pieces to benefit a group deemed particularly deserving of a larger share, its action is said to be justified on equity grounds. In principle, the distinction between efficiency and equity is a neat one. In practice, almost all programs contain elements of both. A program yielding overall net benefits will rarely distribute them equally to all members of society, so who gets what share—equity—must intrude upon consideration of programs which are efficient overall. Similarly, programs designed to redistribute income are never free of efficiency losses because of changes in incentives induced by taxes and subsidies.

⁴American Public Transit Association, 1977-1978 *Transit Fact Book*, pp. 42-43. All common pollutants (except for sulfur oxides) were generated at lower levels per passenger mile by urban buses and trains than by urban automobiles operating at both peak times and on average.

⁵It might seem that the wider group affected by road and highway congestion is smaller than that affected by pollution, since everybody breathes but not everyone drives. But this neglects the effects of congestion on trucks carrying everything from food to furniture—products which are used by everyone, the prices of which include transportation charges. It should also be noted that passengers on congested trains and buses should be willing to pay something to other riders to get them into cars. This amount is almost certainly less than the amount drivers would pay to relieve highway congestion.

⁶This case is somewhat different from that for pollution and congestion because there is less reason to believe that the price of energy cannot reflect the social marginal cost of its production and therefore provide the appropriate market signals to would-be drivers or transit riders. The price of oil set by the OPEC cartel already is much higher than that cost and promotes a lower than optimal rate of use—even granted that oil is an exhaustible resource. The best argument for further attempts to reduce energy consumption, therefore, is that national security, which is a public good, is endangered by too great a reliance on uncertain foreign oil supplies.

provement, counting both gains and losses, provides a reasonable measure of such benefits. In some cases the change will be positive—for example, when a new line is built where none existed before. And where transit produces net positive development changes, it will provide legitimate grounds for subsidization, because the benefits accrue to nonriders.⁷

Since there are gainers and losers, equity must be addressed, too. Financing the improvement with a tax on the increase in land values and paying subsidies to those landowners who suffer losses would be fairest. But in reality, other taxes always have been used and subsidies have not been paid to losers. Thus, benefits generally accrue to some areas and groups at the expense of others. And so, even if development produces a net gain overall, the distribution of benefits remains a matter of concern.

In the past, suburban areas and the Southern and Western regions of the country have benefited from the construction of the Interstate Highway System while the older predominantly Northeastern and North Central cities have lost out. So Federal subsidies to mass transit which provide preferential aid to those cities may be justified as compensation for past inequities.

To Help the Transportation Disadvantaged. The poor, on average, are more likely than others to use some forms of mass transit—especially buses and inner city subways—because they usually have very limited access to automobiles. Thus subsidies to mass transit have the effect of redistributing income toward these people—a goal for which there is a clear mandate.

Some of the elderly and the handicapped also are transportation disadvantaged, because of low income or bodily infirmity. The Federal government recently has mandated greater accessibility to mass transit for these

people. To the extent that government mandates transit accessibility for them as being in the public interest, its additional costs should be paid out of general revenue rather than by user fares. Transit subsidies could help pay these costs.

Thus spillovers, development benefits, and help to the autoless seem to call for more mass transit and less automobile use. Other arguments for such a shift include technical difficulties in setting transit prices to promote efficiency (see **SUBSIDIES, TRANSIT PRICING, AND ECONOMIES OF SCALE**) and the contention by some that transit-oriented cities are more pleasing aesthetically than car-oriented ones. But there may be several plausible ways to bring this shift about, and the costs of these alternatives should be weighed along with the benefits. Transit subsidy and grant programs are the main mechanisms governments have used to stimulate transit and decrease auto use. How well they have worked, however, remains something of an open question.

HAVE SUBSIDIES DONE THE JOB?

Transit subsidy programs undoubtedly have increased transit use over what free markets plus highway subsidies would have produced. But the costs of the transit subsidies may have exceeded their benefits in many cases. Both the size of net benefits and their distribution among different groups are relevant considerations in determining how well subsidies have achieved their goals.

Although many cost-benefit studies of individual projects and programs have been made, it is hard to generalize about program costs because different levels of government subsidize so many different programs. From the available evidence it appears that in many cases benefits have been smaller than anticipated and have not been achieved as efficiently as they might have been. And it appears also that the actual distribution of benefits and costs has not always been as desired on equity grounds.

⁷The same argument applies to other transportation improvements like highways.

SUBSIDIES, TRANSIT PRICING, AND ECONOMIES OF SCALE

The fact that some mass transit operations are characterized by economies of scale complicates the problem of setting the prices of transit services, and this also has a bearing on the use of tax subsidies to achieve economic efficiency. The average cost of carrying passengers on many forms of transit falls drastically as more and more people ride. This is especially true for modes which require expensive separate rights-of-way, like subways, since the capital cost of building the facilities is a large fixed cost which can be spread out over all the users of the system.

But if each extra rider reduces the average cost, then the cost of accommodating the extra rider must be less than the average cost. This extra or marginal cost is the real reflection of extra resource use and is consequently what the price should be set at to achieve efficiency. Unfortunately, at any level of demand where economies of scale are still present, this marginal-cost price is too low to cover total costs—that is, the operating costs plus the fixed costs of construction.

So the reason for charging the higher price (to avoid losing money) conflicts with the reason for charging the lower price (to avoid discouraging passengers willing to pay the extra costs of their ride). Government subsidies allowing transit companies to charge the lower, more efficient price are one solution.

Other solutions are possible. In particular, charging passengers a fixed fee per month or year plus a small marginal charge (even nothing at all) for each ride—like SEPTA's monthly commuter rail passes—could be fairer because it does not subsidize transit riders at the expense of all taxpayers—riders and nonriders alike. If such subsidies to riders are desirable on other grounds, however, then the ability to take advantage of economies of scale can reinforce the argument.*

*Economies of scale throughout the normal range of use also lead to an industry organization which is naturally monopolistic. Big firms with lower unit costs drive out smaller ones. This has certainly been true in the transit industry and was an important reason for much of the earlier public regulation and, sometimes, the takeover of transit companies. But monopoly, *per se*, though stemming from the same cause as the pricing problems encountered in industries with economies of scale, is obviously not an argument for public subsidization of transit.

Benefits Have Been Smaller Than Anticipated. . . The main reason that the benefits from subsidies may be smaller than hoped is that lower transit fares and service improvements have been unable to break America's love affair with the automobile. Transit ridership increases and corresponding decreases in auto use have been relatively small compared to the amount expended to achieve

them. Thus many of the projected benefits of transit use, which hinge on reducing the use of cars, have failed to materialize on the scale desired.⁸

Why do lower transit prices have so small an effect? One answer may be the steady rise in incomes, which has led to more widespread automobile ownership, a more dispersed residential pattern, and a higher val-

⁸A number of studies have demonstrated the low responsiveness of transit ridership to changes in prices. For example, pioneering investigation of Chicago commuters in the 1960s indicated that even free transit rides would have diverted only 13 percent of all auto commuters to public transportation. Leon N. Moses and Harold F. Williamson, Jr., "Value of Time, Choice of Mode, and the Subsidy Issue in Urban Transportation," *Journal of Political Economy*, June 1963, pp. 247-264.

And some transit improvements largely shift people from other transit lines rather than cars. Andrew Hamer, in *The Selling of Rapid Rail Transit* (Lexington: D. C. Heath and Co., 1976), cites 1974 ridership figures for BART indicating that over 50 percent of the daily patrons had been diverted from other transit modes while less than one-third had formerly made their trips by auto. The cost per driver diverted to transit is therefore quite high.

uing of privacy, time, and convenience. Another is the low out-of-pocket cost for car trips compared to the much larger but much less visible sunk cost of automobile depreciation, licensing, insurance, and maintenance. Higher gasoline prices and spot shortages have helped transit subsidies reverse the ridership downtrend somewhat, but how large or lasting their impact will be remains to be seen.

... And Costs May Have Been Too High. The usual criticism of government programs—that they are too costly—can and has been leveled at mass transit subsidies. It is not clear that these programs are any worse or better than others. But in at least one respect—project evaluation—the procedures of the Federal Urban Mass Transit Administration and some other government agencies involved with transit seem to have been deficient. Cost-benefit calculations to decide among projects were not required in the early years of the Federal capital grants program. And despite the fact that extensive cost-benefit studies are required now, some critics maintain that they could be improved in many ways.

Some argue, for example, that expensive new subway systems like Washington's METRO and Atlanta's MARTA are being built without proper consideration of cheaper alternatives. Their contention is that the cost-benefit studies cited in support of subways have often given short shrift to well designed bus systems using reserved highway lanes for express buses, priority curb lanes for buses on downtown streets, and

other innovative features.⁹ Although many transit professionals have labeled such bus systems unworkable and therefore unworthy of consideration in cost-benefit calculations, others claim they can meet the same needs as subways at a fraction of the cost.

Equity Sometimes Has Been Furthered. In judging whether equity has been furthered by transit subsidies, the distribution among various people of both the benefits and the taxes used to pay for them must be considered.¹⁰ Some transit programs almost certainly accomplish a redistribution of income toward the poor or aged. In Pennsylvania, for example, lottery receipts are used to reduce fares for elderly transit riders. And in Atlanta, a sales tax is used to reduce fares for everyone. The tax in Atlanta's case is regressive—people with lower incomes pay a higher percentage of their income in taxes than do the more affluent. But since the percentage of lower income people who use transit is relatively large, overall this group gets more back in benefits than it contributes in taxes.¹¹

But other programs may make the distribution of income more uneven, despite the heavier taxes paid by those relatively affluent people who benefit most. Much criticism, for example, has been leveled at the use of tax money to subsidize subway and commuter rail lines on the grounds that they serve mainly to bring relatively affluent commuters into downtown areas. Such sub-

⁹The bus-versus-subway debate is hard to settle because present bus systems usually fall far short of the potential performance touted by bus advocates. Some comparisons of express bus systems with subways have been made, but the results are inconclusive. The seminal work in the bus-versus-subway debate is John Meyer, John Kain, and Martin Wohl, *The Urban Transportation Problem* (Cambridge: Harvard University Press, 1965). See also Hamer, *The Selling of Rapid Rail Transit*.

¹⁰Two economists at the Brookings Institution, Joseph A. Pechman and Benjamin Okner, have calculated that the total burden of all taxes combined—local, state, and Federal—probably is about proportional to income for the great majority of people. So it is not necessary for those at the lower end of the income scale to get more benefits than those at higher levels for the distribution of benefits to be in the direction of greater equity, only for them to get more in proportion to their incomes.

¹¹For a description of the Atlanta program see John W. Bates, "Using Sales Tax To Support Low-Fare Pricing of Transit Services in Atlanta," in Transportation Research Board, Special Report 181, *Urban Transportation Economics*. (Washington, D.C.: National Academy of Science, 1978).

sidies, it is argued, provide little direct benefit to the poor and elderly in cities, because outlying jobs, shopping, and recreational facilities are seldom within walking distance of terminals in the relatively spread-out suburbs. Even the indirect benefit that accrues to these groups from downtown economic development, which provides jobs and thus taxes to pay for social services, may not completely offset the lack of direct benefit.

So some transit subsidy programs probably do work in the direction of greater equity while some probably do not. Equity gains and losses should be counted in decisions to keep, expand, or cut programs. But consideration should be given also to alternative means of achieving the same goals.

Typically, programs which subsidize certain goods or services rather than certain people suffer from two distinct defects as primary vehicles of income distribution. The first is that *all* purchasers—in this case all transit riders—receive the benefits of the subsidy, whether or not they belong to the target group. The second defect is that the intended recipients of the benefit might prefer the cash value of the subsidy to the subsidy in kind. In the case of transit, greater equity might be achieved by providing transportation vouchers to target groups than by overall subsidies. And if making the poor better off, rather than improving the transportation system, is the principal goal, direct income transfers through welfare or a negative income tax might be more efficient than a traditional subsidy.¹²

Summing up, transit subsidies have achieved some goals and failed to achieve others. Looking behind the goals shows that

¹²Most economists favor pure transfers to promote equity. Some exceptions to the rule are Lester C. Thurow, "Cash Versus In-Kind Transfers," *American Economic Review*, May 1974, pp. 190-195, and George A. Akerlof, "The Economics of 'Tagging' as applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning," *American Economic Review*, March 1978, pp. 8-19.

many of the conditions that transit subsidies are intended to rectify stem from too much auto use rather than too little transit use. But if automobile use is the root cause of this situation, programs with direct impacts on auto transportation probably are required for a successful transportation policy.

A DIFFERENT APPROACH

Because both autos and transit are part of the urban transportation problem as well as its solution, what is needed is a more fully integrated approach to urban transportation. Along these lines there is currently strong interest at the Federal level in coordinating transit and highway programs. While fraught with political obstacles, effective coordination could help trim the size of the subsidies going to both transit and highways, without cuts in service. With this in mind, the Secretary of Transportation has proposed merging the Urban Mass Transportation Administration and the Federal Highway Administration. And within UMTA itself, low-capital alternatives to transit subsidies, encompassing automobile restrictions and pricing schemes as well as operational changes in transit modes, are seen as promising a way to hold down costs while achieving better transportation. Proper pricing of roads and better regulation of autos could be the key to a much better use of resources and a much smaller commitment of funds to the entire public transportation sector—roads and transit.

The urban transportation problem may be likened to a very stubborn donkey. Transit subsidies make a juicy carrot to dangle in its face; but, unfortunately, a stick seems to be necessary as well to hasten the pace. The stick could take the form of pricing for streets and parking that conveys more fully to drivers the true scarcity of the resources they are using, along with restriction or regulation of automobile use where pricing appears too costly or otherwise inappropriate.

Road Pricing. Drivers of automobiles are

more likely to respond to the extra costs their actions impose on the people on the other side of the windshield if these costs are forced upon them in the form of higher prices for auto use. Charges for driving in congested and polluted areas and at peak times of day would be particularly effective. Although pricing schemes to promote more rational use of roads and highways have been advocated for decades, they have almost never been put into practice. Two commonly proposed methods are the use of automatic vehicle meters and supplementary licensing to enter or traverse certain zones.

Automatic vehicle monitoring (AVM) systems offer a way to move the toll collector out of the toll booth and into the car with the driver. Such devices are being used in New York Port Authority buses, but only to collect the usual bridge and tunnel tolls, not for congestion and peak-time pricing. The technology and politics of implementing AVMs on a wide scale might prove to be severe.

An alternative way to charge drivers for adding to congestion is to levy a supplementary license fee for peak travel in the central business district. A quite successful plan of this type has been in effect in Singapore since 1975 (see **THE ROAD TO SINGAPORE**). UMTA has been looking for a U.S. city interested in trying such a plan, but up to now there have been no takers.

Increased Parking Charges. A different type of pricing scheme is to increase parking charges for downtown commuters. Besides reflecting the cost of parking-lot land, parking surcharges would indirectly capture the cost of using the urban roads to get to the parking space. A prime example of a city which used to operate in just the opposite fashion is Washington, D.C. Many government employees had free parking spaces in the heart of downtown until the present Administration instituted a charge for parking in the interest of saving energy.

Road Management. When administrative

THE ROAD TO SINGAPORE

In 1975, Singapore became the first city in the world to restrict peak-hour downtown automobile traffic through the use of supplementary licenses. For \$26 (U.S.) per month, drivers can purchase special permits which must be displayed for morning peak-time entry into the most congested part of the city—a central area covering about twelve square miles. The 22 entry points to this area are monitored by police, who record the regular license numbers of violators and write tickets which are issued by mail.

These licenses are the key to the overall anticongestion plan. Two additional elements, also implemented in 1975, are the doubling of parking fees at public lots in the restricted area and the inauguration of a park-and-ride system. The latter consists of downtown shuttle bus service from about 10,000 parking spaces around the periphery of the restricted zone, carrying a total user charge of \$13 per month for parking and riding.

The program has been extremely successful. Congestion has been reduced drastically for all travelers—bus passengers, pedestrians, and the remaining drivers. The peak flow of cars into the downtown area has decreased by about 40 percent. Reductions in travel time on regular city buses have run about 25 to 30 percent during peak hours.

The program has worked well in other ways, too. Downtown business evidently has not been hurt. Air pollution has been cut. And program revenues have far exceeded administrative and enforcement costs. Overall, the costs of the system appear to be smaller than the benefits.*

*A description of the Singapore experience may be found in Peter L. Watson and Edward P. Holland, "Congestion Pricing: The Example of Singapore," in Transportation Research Board, Special Report 181, *Urban Transportation Economics* (Washington, D.C.: National Academy of Sciences, 1978).

costs seem too high for road pricing methods or the public refuses to accept them, other types of restrictions to achieve the more efficient use of roads could be employed. Metering of ramps onto highway interchanges to improve traffic flow has been implemented in some areas. Special priority lanes for buses, van pools, and car pools also have been tried, although they have not always been accepted by drivers. Outright bans on parking or driving in certain areas, especially downtowns, could be a second-best alternative to charging autos a premium to drive there.

Road pricing and management are useful for achieving greater efficiency, but what about equity? Cutting transit subsidies without making offsetting changes would be a move away from helping the transportation disadvantaged. But if transit use is increased by restrictions on autos so that it is closer to a socially optimal level, economies of scale in transit could help lower the incremental cost per rider. This would help those who use transit more, like the poor and elderly. Furthermore, subsidies wouldn't have to be cut, even if taxes were lowered, if some or all revenues derived from highway pricing were diverted to transit. Finally, even if the end result were higher fares than before, transportation vouchers could be used to offset losses to the poor if society deemed it desirable to make up these losses. Although the funds for such vouchers would come out of tax revenues, this method of promoting equity

probably would allow better targeting of subsidies to people with lower incomes.

PROSPECTS FOR THE FUTURE

While there are sound reasons for government involvement in mass transit, past programs seem to have been less than optimal. Some subsidies are desirable, but for full impact they need to be coordinated with road pricing and other restrictions on automobile use. Thus a rethinking of goals and an effort to get more productivity from the transportation dollar might be the best way to reconcile a desire to cut taxes with a reluctance to give up social benefits. And this rethinking is especially important now in the light of recent increases in energy prices.

Given the current political urge toward less government rather than more, it might seem that this is an unlikely time to bring in more regulations and fees for automobiles. Resistance from drivers is to be expected, since they will bear the costs directly but may be dubious about the benefits. Still, to the extent that roads and parking facilities have been subsidized by government actions in the past, a withdrawal of the implicit subsidies going to auto travel would be both efficient and equitable. And if road fees were used to help finance transit (where justified by public benefits), the quid pro quo of reducing taxes by cutting the amount of general revenue that goes to transit subsidies could be the key to acceptance.

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The Board of Governors of the Federal Reserve System recently issued this pamphlet, which describes the protection provided to credit card users by Federal law. Copies are available without charge from the Department of Public Services, Federal Reserve Bank of Philadelphia, 100 North Sixth Street, Philadelphia, Pennsylvania 19106.

