Articles

U.S. Transit Subsidy Policy: In Need of Reform

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Public transit in the United States has depended increasingly on public subsidies since the inception of the federal mass transit assistance program in the early 1960s. The subsidies are associated with declining efficiency and labor productivity, as urban transit systems have overcapitalized, simplified fare structures, and extended service into sparse suburban markets. Despite these subsidies, transit has not proved successful in countering the effects on its market of increased automobile ownership and use and of decentralization of residences and places of employment.

DURING THE 1950s, SUBURBAN HOMEBUILDING AND automobile purchases increased rapidly in America in response to demand that had been depressed by two decades of depression and war. Construction of the National System of Interstate and Defense Highways began in 1956. Under this program, financed by the proceeds of a national gasoline tax, up to 90% of the cost of new intercity highways was borne by federal subsidies, whereas the states were responsible for only 10% of the costs. Federal construction subsidies were later extended to urban expressways and freeways, which provided access to the downtown of large U.S. cities from their burgeoning suburbs and fed the demand for suburban houses and cars.

Public transit was at the time largely privately owned. It had been in a state of steady decline since before 1920, but had managed to eke out small profits. Helped by gasoline rationing and the unavailability of new automobiles during World War II, transit took a financial beating during the 1950s. Between 1954 and 1963, 194 transit companies went out of business (*1*), and many medium-sized cities were left without service. Transit operations were increasingly falling into public hands as cities tried to rescue them from bankruptcy and maintain service for their citizens. Urban congressmen, urged on by mayors of large cities and labor unions representing transit workers, began to consider federal aid to transit systems. For nearly 30 years, transit finance has been dependent on the complex system of federal, state, and local subsidies. Although state and local contributions have been larger than federal contributions, federal policies have been central because they have defined the conditions governing subsidies from other levels of government.

Federal Transit Subsidy Program

In 1961 Congress approved the first federal aid for public transit, a $25-million program for loans and demonstration projects. In 1964, Congress appropriated general revenues for a much larger program of capital grants to build or renovate facilities, purchase transit coaches, and acquire private companies for public ownership and operation. Federal funds for these capital programs were available on a matching basis. State and local governments were required to cover one-third of the cost in order to acquire the federal contribution of two-thirds. This matching ratio was later changed to allow the federal share to be as large as 85% under certain circumstances.

Congress initially intended to support only capital costs, those associated with the purchase of land and equipment and the building of new facilities. Congress did not wish to subsidize operating costs, consisting primarily of labor, fuel, maintenance, and administration. It was argued that if local governments were required to cover their own operating costs, they would spend the capital subsidies so as to optimize efficiency; if they could use federal dollars for operating subsidies, there would be no incentive to achieve efficiency and costs would rise endlessly (*2*). By 1974, however, demands for increases in federal transit subsidies were so great that operating subsidies were added to the federal program, with a maximum 50:50 matching ratio requiring the use of state and local tax revenues in at least equal proportion to the federal money as a condition for receipt of the federal operating subsidies.

Until 1982 all federal transit subsidy support came from the nation's general revenue fund, which made it vulnerable to pressures for deficit reduction. The Surface Transportation Act of 1982, however, raised the federal gasoline tax by 5 cents per gallon, and for the first time 1 cent per gallon was earmarked for support of the public transit capital grant program. A new program was also created by this act which gives federal grant recipients greater flexibility in determining whether to spend their funds on capital or operating costs. To date, most federal subsidy support has been used for capital expenditures because the federal matching rate is higher if federal funds are used for capital investments.

The most direct purpose of the federal assistance program for mass transit was to maintain and improve transit service and thereby to contribute to the "welfare and vitality" of the urban areas in which most transit systems are located (*3*). The rationale for transit subsidies included knowledge that private operators would certainly experience difficulty competing with heavily subsidized highway networks and that cities needed transit to avoid rush hour congestion on those networks. Additional indirect benefits that were expected included relief of urban traffic congestion, reduction in the consumption of fossil fuels, provision of transportation service for those too old, too young, or unable to drive cars because of handicap, reversal of the physical and social decline of the inner cities, and reversal of "urban sprawl."

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Nearly $40 billion of federal money has been spent on public transit subsidies since the inception of the program, and there is widespread agreement among transportation planners, economists, and politicians that the benefits of the program have not been warranted by its costs (*4*). There is, however, less agreement on the reasons for the failures. In this article, I present data on the performance of the nation's transit systems during the past 25 years in order to establish a basis for the current debate over public transit subsidy policy. Then, I examine some proposals for overcoming the shortcomings in current transit programs.

Recent Trends in Transit Industry Performance

In 1940, a small number of transit companies, operating 7% of the country's vehicle-miles of service, were in public ownership. In 1965, as the federal subsidy program was getting started, 48% of service was offered by companies in public ownership. By 1985, the effects of the transit subsidy program were clear. By then, public ownership extended to companies providing 96% of the vehicle-miles of service (*5*, p. 17). Rural and smaller urban transit systems are still operated to a significant extent by private companies, whereas the large urban transit systems are nearly all in public ownership, their acquisition facilitated by the subsidy program.

The availability of transit service had been steadily declining as companies faced severe financial problems. From about 3.2 billion vehicle-miles in 1945, service available to Americans fell to about 2.1 billion vehicle-miles in 1960. Although transit service levels continued to decline in the early years of the subsidy program, by 1987 transit service had risen again to 3.0 billion vehicle-miles (*5*, p. 34; *6*, p. 34).

Transit ridership has reflected the increase in service offered. Ridership had been declining precipitously during the 1950s and 1960s. In 1950, the nation's transit systems provided 17.246 billion rides, and by 1965 annual ridership had declined to 8.253 billion. During the early years of the subsidy program, ridership continued to decline. In 1970 it reached a low of 7.284 billion rides, but it turned upward again and by 1987 annual ridership was 8.340 billion (*5*, p. 32) (Fig. 1). Relying heavily on federal capital grants, new rail systems were built in Washington, D.C., Atlanta, Baltimore, Miami, Portland, Sacramento, and Buffalo, and others are under construction in Los Angeles and San Jose. Major expansions of older rail systems have also been completed, such as the extension of the Chicago system to O'Hare Airport. In many other cities, bus lines have been extended and fleets expanded. Figure 2 shows how service, ridership, and employment in the public transit industry have changed over the life of the subsidy program.

Although the long-term decline in transit ridership has leveled off in absolute numbers, ridership continues to lose ground to the automobile in relative terms. Americans made 3.6% of their trips on public transit in 1969, but that share had declined to 3.0% in 1977 and to only 2.6% by 1983 (*4*). And, the decline in transit's share of the travel market has been associated with enormous increases in costs and substantial declines in productivity and cost effectiveness.

Between 1965 and 1983, operating cost per vehicle-mile of transit increased more than twice as fast as inflation. During those years, there has been a rise in operating cost of 419% versus an increase of 189% in the consumer price index. Thus, the "real" operating cost of transit rose about 80% in those few short years. Increases have occurred in all regions and in both rail and bus systems (*7*). The increases in costs have been borne largely by the taxpayers. Prior to 1965, although the industry was in decline, nearly all the cost of transit service was paid for by farebox revenues. By 1987, however, the fares paid by transit passengers covered only 39% of the

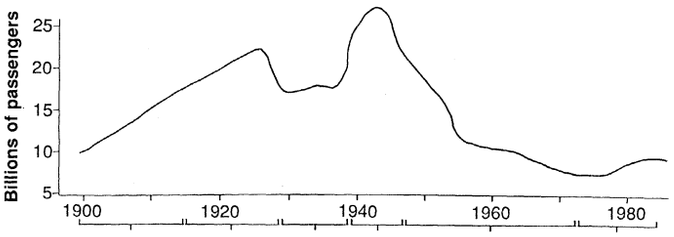

Fig. 1. National transit ridership from 1900 to 1985 (*6*).

Table 1. Sources of revenue among U.S. transit systems (*4*).

Source of revenue	Revenue (% of total)*		
	1975	1980	1985
Passenger fares	54	39	37
Other operating income	5	4	6
State and local subsidies	32	40	50
Federal subsidies	9	17	8

*Totals differ slightly due to rounding.

industry's operating costs; federal, state, and local subsidies accounted for 57%. Other sources, such as revenue from advertising on vehicles and rental of space in stations to retailers, provided about 5% of revenue (*5*, p. 20). Although federal subsidies have been influential in determining national transit trends, they have declined rapidly during the years of the Reagan Administration. State and local subsidies have grown more rapidly and now account for a much larger share of the total transit budget than does federal assistance (Table 1).

Transit is an industry that is dependent upon labor and fuel, and both of these inputs have experienced cost increases in excess of the inflation in all goods and services. In a detailed study of transit cost increases Pickrell found that of expenditures of more than $16 billion of federal, state, and local subsidy dollars between 1975 and 1984, 36% covered increased labor costs per unit of service, and 16% covered increased cost of fuel and spare parts. But, in addition, 27% covered the cost of an 8% increase in vehicle-miles of service, and 16% paid for the cost of revenues lost because transit fares rose more slowly than inflation. These findings stand in stark contrast to the arguments for increases in the subsidies, which stressed that they were an investment that would pay off in more efficient transit service (*8*).

Transit is labor intensive, with wages and fringe benefits accounting for more than 70% of the operating cost of service. It is, therefore, particularly disturbing that transit labor productivity has declined precipitously since the inception of the national subsidy program. The number of employees in the transit industry rose from 156,400 in 1960 to 261,900 in 1985, while the number of vehicle-miles of service offered per employee fell from 14,000 per employee to fewer than 11,000 (*3*). At the same time, the cost of labor, including fringe benefits, has grown dramatically, though there are substantial differences from city to city. In 1986, for example, total compensation for bus drivers at the Southern California Rapid Transit District in Los Angeles averaged $49,777 in comparison with an average of $34,426 at a unionized private operator in the same area. In Washington, D.C., total compensation of bus drivers was $44,014 at the Washington Metropolitan Area Transit Authority, in comparison with an average of $19,418 for a nonunionized private operator in the same area (*9*). When confronted with trends such as these, many argue that the benefits of the subsidies have accrued disproportionately to those who provide transit service rather than to those who use it.

Table 2. Distribution of growth (%) in commuting trips, 1960–1980.

From	To		Total
	Central city	Suburbs	
Central city	9	9	17
Suburbs	25	58	83
Total	34	66	100

Why Has Transit Efficiency Deteriorated?

Behind the raw numbers lie several trends that help us understand declining efficiency in the transit industry. These trends include a rapid increase in automobile ownership and accelerating suburbanization. In recent decades suburbanization of employment has accelerated even faster than the decentralization of residences. Although it was at various times argued that subsidies to public transit might play a role in reversing these trends, it is now clear that national transit policy will do little to slow automobile use or urban decentralization.

The most direct influence on transit use has been continuing growth in automobile ownership in the United States. This is largely a reflection of increasing income, although it is observed among people of all income and age groups and in urban as well as rural and surburban communities. The census of 1960 showed that as we began transit subsidy programs there were 0.34 automobiles per capita in the United States. By the most recent census of 1980, there were 0.54 cars per capita (*4*). And automobile ownership has continued to increase since the last census. The National Personal Transportation Studies, based on national samples of several thousand households, showed that the proportion of households not owning automobiles dropped steadily from 20.6% in 1969 to 15.3% in 1977, and to 13.5% in 1983, the most recent survey year. During the same period, the proportion of households owning three or more vehicles rose from 4.6% in 1969 to 15.6% in 1977 and to 19.3% in 1983 (*10*). It seems unrealistic to expect improvements in public transit to yield substantial reductions in car ownership, and people who own automobiles tend to use them even when decent transit service is available.

When the national transit subsidy program was started in the early 1960s, the population of the United States was suburbanizing very rapidly. At that time, suburbs were primarily residential communities; manufacturing and service industries were still concentrated in the downtowns of our metropolitan areas. Transit subsidies were in part intended to improve service between outlying residential suburbs and the central city employment cores. The single most important change in the spatial distribution of activities since the 1960s has been the rapid decentralization of employment. In part this is related to the decline of manufacturing, changes in the technology of manufacturing, and the rise of service industries. Service industries have moved out of central cities in order to benefit from lower land costs and greater proximity to suburban labor pools, clients, and customers.

This shift is reflected in the distribution of commuting trips. Work trips made between origins and destinations both located within the central cities of U.S. metropolitan areas grew in absolute number from 1960 to 1980, but declined as a proportion of all work trips, from 46% in 1960 to 30% in 1980. Suburban to central city work trips doubled in absolute number during those 20 years, increasing from 16% to 19% of total commuting journeys. "Reverse commutes," from central city residences to suburban jobs, remained a steady 5 to 6% of all work trips during those two decades. The most dramatic growth in work trips occurred between origins and destinations both located in the suburbs. The number of Americans who both worked and lived in the suburbs grew from 11 million in 1960 to more than 25 million in 1980, and their share of the total commuting work force rose from 28 to 38%. Flows of those who lived in the metropolitan areas but worked outside them also rose from 4 to 7% of the work force between the 1960 and 1980 censuses (*11*) (Table 2). Traditional forms of public transit can compete with the automobile for suburban commuters only at very high cost and with poor efficiency, and it seems likely that transit will not recapture the bulk of its lost ridership in the face of the ongoing spatial reorganization of employment.

Policy Responses to These Trends

The failure of U.S. transit policy has not been its inability to reverse the increase in automobile ownership and use nor to slow the suburbanization of population and employment. A far greater problem has been its failure to adapt transit service to the emergent conditions.

Urban subway systems are most efficient where there are corridors of movement exceeding 20,000 transit trips per hour in one direction. Such flows can only be achieved where people travel by public transit from dense concentrations of residences to centers of commerce and employment. Increasing automobile ownership and the dispersion of population and employment to the suburbs have reduced the number of places where these conditions are met. An appropriate response would have been the construction of very few, if any, new rail systems. For political reasons, however, transit policy-makers tried to change the trends by their policies, and rail investments were made in Baltimore, Atlanta, Miami, Buffalo, and a number of other questionable locations. Federal support for rail systems was increased in an effort to slow the trend toward suburbanization and to encourage people to choose transit rather than automobiles for trips to work. Heavy investments in rail systems concentrated billions of dollars of federal funds in a few urban corridors. These systems have high capital costs, and their advantages can be obtained only at very high travel volumes, at which their operating costs per passenger might fall below those of bus systems. But the suburbanization of people and businesses continued unabated in all of the cities in which these capital investments were made, so travel volumes have risen too little to take advantage of the potentially greater efficiency rail systems can provide in dense travel corridors. And when rail lines operate well below their capacities, operating costs per passenger are usually higher than those of the traditional bus systems which they replaced. Because of low utilization, of course, urban rail systems have provided few of their promised indirect benefits in the form of improved air quality or energy use.

While building rail transit in several urban cores in a vain attempt to slow suburbanization, transit management faced another problem. Increasingly dependent on public subsidies to pay transit bills, policy-makers became sensitive to the fact that the upper income citizens whose taxes paid for the systems were increasingly living and working in low density suburban communities. Because they were paying the transit subsidy bill, suburban commuters' representatives on transit boards and in Congress called for extensions of bus systems to low density communities in which the tax base increasingly resided. In low density areas, public transit incurs large deficits because it collects fewer fares per route-mile of service and operates more vehicle-miles per passenger served. Because travel demand is low on outlying suburban routes, transit operators can offer service on those routes at much lower frequencies than they do on inner-city routes. This explains why transit route-miles increased 38%

between 1970 and 1980, whereas vehicle-miles of service increased by 20% and ridership increased by only 6% (*8, 12*).

One of the main sources of transit's financial problems is pronounced peaking of the demand for service. The industry has always served the bulk of its passengers during rush hours when most journeys are made to and from work and school. Most people using transit at the off-peak hours are transit-dependent, too poor, young, or old to drive. As car ownership has increased, transit travel has declined most markedly outside of the peak hours. Most of transit's costs are attributable to its policy of meeting peak hour demand. The heavy capital costs of subway tunnels, rail cars, and large bus fleets are attributable to the provision of capacity to meet rush hour travel demand. Proper cost accounting shows that the marginal operating cost of a passenger carried during the rush hour is also substantially higher than the cost per passenger carried during the nonpeak hours, because large work forces needed for the peak hours are not employed at maximum productivity during the off-peak hours. The financial burdens of peaking have been accentuated by building high capacity systems and extending routes into low density areas where riders are attracted only during rush hours.

Many other public services are characterized by pronounced peaking of demand, and one of the most common ways of dealing with the economics of peaking is through appropriate pricing. For example, telephone companies charge much lower prices for calls made at night and on weekends than during the peak hours of business calling. This policy shifts demand to the periods at which there is ample capacity and away from the times when its limited capacity is most heavily demanded. The policy also charges the highest prices to business callers, whose demand is less affected by price. Public transit, on the other hand, has generally maintained a policy of pricing its service at the same fare regardless of hour and hence of cost. As consequence, rush hour travel is more heavily subsidized than nonrush hour travel. For example, peak hour service on the Southern California Rapid Transit District accounted for 58% of the system's costs but only 50% of its farebox revenue, whereas off-peak service accounted for 42% of the costs but 50% of the revenue (*13*).

A similar misallocation of resources occurs with respect to trip length. Transit operators in the United States usually employ a flat fare system, in which the charge does not vary with the distance traveled. Even where premium fares are charged for express commuter lines to the suburbs, the fare is much lower than the cost of the service. By contrast, most European transit systems employ what are called "stage" fares, or "zone" fares, in which the payment varies with the length of the trip, roughly in accord with the cost of providing the trip. Flat fare systems subsidize longer trip makers at the expense of shorter distance travelers, since the cost of providing a longer trip is higher than a shorter one. In Los Angeles, for example, a passenger traveling 1 mile paid a fare that was 2.2 times the cost of providing his or her trip, whereas a passenger who traveled 20 miles paid a fare that covered only about 10% of the cost of the trip (*13*). The sale of discounted monthly transit passes exacerbates this problem. Monthly unlimited ride passes are most likely to be purchased by long-distance peak hour travelers, who thus obtain higher subsidies than many other riders.

As operating costs rise and there is pressure to raise transit fares, each increase in a flat fare worsens the inefficiency and inequity of that fare system. When the fare on the New York subway was 5 cents, it might have mattered less that the 20-mile traveler paid the same fare as the 2-mile traveler. But today, the fare is $1 and the 20-mile traveler is often richer than the 2-mile traveler and is being subsidized to a far greater extent. Each fare increase hurts the poorer, shorter distance travelers and causes them to forego some of their trips. As a result, each fare increase eliminates from the transit market more and more people who need transit the most, and this brings about greater political pressure to finance the systems using subsidies rather than raising fares.

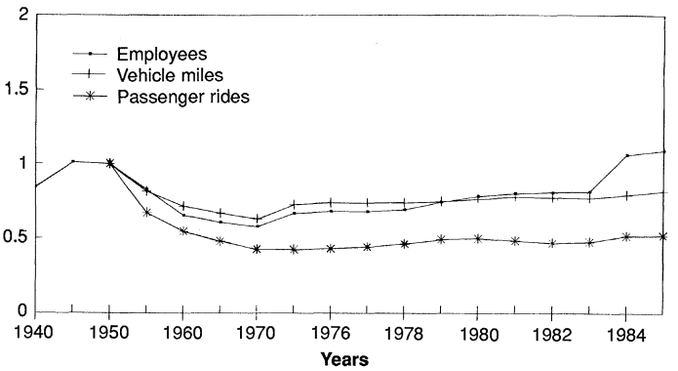

Fig. 2. Trends in transit service (vehicle-miles), patronage (passenger rides), and employment, standardized with 1950 levels = 1.0.

A final reason for the decline of public transit ridership is the widespread fear of crime. America's transit systems are physically dangerous because criminals prey on the traveling public at bus stops and subway stations, on buses, streetcars, and subway trains. In a survey of more than 1100 transit users in Los Angeles, for example, 16% reported being victims of a crime, and another 19% had witnessed a crime at a bus stop, on a bus, or walking to or from a bus stop (*14*). The magnitude of transit crime is understated by crime reporting mechanisms. Uniform crime reporting forms do not designate transit stations or vehicles as specific venues for recording crimes, and they are thus lumped together with many other crimes in a category called "street crimes." Despite inadequate data, it is widely understood by transit managers that some people choose to drive or simply decline to travel because transit environments frighten them.

The modern subways in Washington, Atlanta, and Baltimore have been consciously designed as secure environments, and crime rates on these systems are remarkably low; they are among the safest places in those metropolitan areas. Far less attention to security has been given to the design of buses or the provision of lighting and police surveillance at bus stops. In many urban areas transit authorities have reluctantly accepted responsibility for policing the vehicles and added uniformed police to their payrolls. On the other hand, security at bus stops has become a political football. Transit officials claim that it is the responsibility of the local police; local police refuse to allocate special resources to the protection of transit installations. National transit policy is virtually silent with respect to the importance of protecting the riding public, and those who have a choice increasingly avoid transit, leaving those who have no choice but to ride even more vulnerable to urban criminals.

Implications for Transit Subsidy Policy

Transit policy in the United States for the past quarter century has succeeded in stemming absolute declines in transit service and ridership, but the cost of achieving this has been great and there is widespread agreement that the transit program has done little to slow urban decentralization, conserve energy, clean the air, or spur the revitalization of inner city economic life.

It was surely unrealistic to expect transit policy itself to accomplish all of these goals. Pucher (*15*) compared U.S. transit policy with ten European countries and Canada. He found that the impacts of transit elsewhere have been far more favorable than in the United

States. Suburbanization has been occurring more slowly in those countries, and public transit, though heavily subsidized, continues to attract a large proportion of daily urban trips. Pucher, however, does not ascribe these results to transit policy alone. Rather, he concluded that in European countries and Canada much smaller subsidies to highway systems, much higher taxes on automobiles and gasoline, and land use policies discouraging suburbanization explain most of the success of transit programs (*15*). In the United States, a Congress committed to large increases in transit use might emulate these policies. It seems unlikely that U.S. policy-makers will adopt such a stance, however, given the enormous political power of the highway and automobile industry lobbies, and the apparent widespread preference for low density, suburban, auto-oriented lifestyles as incomes rise.

Similarly, it is unrealistic to expect that U.S. policy-makers will abandon transit subsidies. Peak hour congestion on highways would grow enormously if transit service were cut in response to reduced support, and transit does provide an essential service to a diverse clientele. The 1983 National Personal Travel Survey showed that nonwhites accounted for 44% of all transit trips, females 55%, people under 20 years of age 30%, and those over 65 accounted for more than 20% (*12*). There is likely to be a continuing consensus that these groups are worthy of subsidization and that transit is a vital public service, essential to their quality of life. Thus, it is most realistic to pursue in the short run policy changes that will ensure that transit subsidies are structured to obtain more cost-efficient use of public resources. If major changes in highway and land use policy can also be achieved, in the long run transit policies would be even more effective.

The federal government has induced cities to overcapitalize their transit systems by designating large proportions of the total subsidy budget for rail system construction and for the purchase of new equipment. Separate operating and capital assistance programs should be integrated into a single transit "block grant" to be distributed among urban areas according to some agreed upon formula (7). This would lessen the pressure that exists under current policy to emphasize new construction at the expense of maintenance. The formula for the distribution of block grants might also reward the most efficient transit operators by providing larger subsidies to those with the smallest operating deficits.

Because the cost of labor, including fringe benefits, accounts for 70% of transit operating costs, efforts must be made to lower labor costs. Many have urged that transit service be "privatized," by allowing private operators to bid on services currently operated by public authorities. Savings from privatization have been estimated to be on the order of 10% of current transit operating costs. Privatization should be pursued where it is appropriate, but the benefits of privatization may be exaggerated. Private transit service was abandoned within the past 20 to 40 years as largely unprofitable. By using part-time and nonunion labor, and skimping on fringe benefits, private contractors can bid below public service providers in the short run. But, when private contractors succeed and expand, there is pressure for their work forces to become unionized, and in time the differential between private and public costs is lessened. Public authorities have, during the past 5 years, been able to negotiate more favorable wage and fringe benefit settlements than had been the case earlier, in part because of the threat of privatization as an alternative. More use of part-time workers, and more use of split shifts, which require drivers to work during morning and evening peaks without overtime penalties, have recently been negotiated. These have provided public systems with some of the benefits many claim for privatization. Rather than advocating privatization as a blanket solution, regional transit authorities should encourage competitive bidding between private and public providers for transit services, allowing the service to be provided by the lowest financially responsible bidder.

Transit fare structures should be reformed to allow greater recovery of costs from the farebox and, thus, for subsidies to be used more efficiently. Price differentials should be introduced to encourage more off-peak transit use at bargain prices; peak hour fares should reflect their costs to a greater extent. Prices should be reduced for short transit trips and raised for longer trips in reflection of the cost differentials of providing the service.

Inner city local transit routes cover the largest share of their costs from the farebox, whereas suburban locals, express bus commutes to the suburbs, and underused urban rail systems require the largest subsidy per rider served. Transit management should limit service expansions to low density outlying areas despite the movement of the population and jobs into suburbia. Vanpooling, carpooling, and employer-operated company buses can supplement the automobile in the suburbs at lower cost, and public transit operators should serve their traditional markets, where they can achieve economic efficiency.

Finally, transit operators should accept responsibility for the personal security of their passengers, allocating a larger proportion of their resources to crime prevention on the vehicles and at stations and bus stops. Citizens who have a choice will refuse to ride urban transit until they believe that they can do so in safety.

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16. The author gratefully acknowledges suggestions made by D. H. Pickrell, D. Shoup, N. Levine, and J. Pucher and the assistance of M. Brown and S. Wirka.