

Research Department  
Federal Reserve  
Bank of  
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## Making Transit Work

According to recent opinion polls, most Americans believe that we have "too little" public transit. Government has responded to this sentiment with massive transit-subsidy programs. Capital and operating grants to transit systems from Federal, state and local governments now average about \$4.5 billion annually, or about 75 cents for each passenger trip. Moreover, President Carter has proposed increasing Federal assistance by \$13 billion over the next ten years.

Despite this public largess, few people actually ride transit systems—less than 6 percent of all commuters, for example. Although the gasoline shortage last spring generated some additional business, transit generally has not cut into automobile use. Between 1973 and 1978, auto travel grew faster than transit traffic despite higher energy costs and transit subsidies. To a large degree, of course, the auto's success is due to its very attractive service features, such as its high level of privacy and flexibility. Even so, our transportation policies may encourage too much use of the automobile and too little use of transit. This article reviews some of the ways by which economists believe an efficient balance between transit and the automobile can be restored.

### Highway pricing reform

Foremost on the agenda for reform are our policies involving charges for highway use. As pointed out in our August 24 *Weekly Letter*, economic efficiency requires that vehicles be charged (through the use of tolls or special permits) for the delays they impose upon other vehicles during periods of traffic congestion. Since a car carries many fewer passengers than a bus, the congestion charge per passenger should be much greater for the car. A recent study of California freeway traffic suggests that auto costs should be greater than bus costs by about 19 cents per passenger mile during peak periods. The

present differential, however, is only about 1 cent per passenger mile, putting transit at a severe competitive disadvantage to the automobile—and making unsubsidized, private provision of transit service virtually uneconomic. (In 1977, privately-owned systems accounted for only 8 percent of all transit trips.)

Although policymakers (and the public) recognize the inefficiency inherent in the present system, they are somewhat reluctant to remedy the problem directly by devising methods to charge for costly peak-hour road usage. Instead, they try to redress the imbalance by subsidizing public-transit systems. But as Leon Moses of Northwestern University has argued, the imbalance is so severe that it can be corrected only by paying people to take transit. As a result, present policy yields the worst of both worlds: massive, but ineffective transit subsidies and no relief from highway congestion.

### Rapid rail transit ...

Although the reform of road pricing is the crucial missing element in our current transit policies, the imbalance between transit and the automobile can also be improved by better use of existing public-transit funds. One way to do so is to support transit technologies which are close substitutes for the automobile. This would tend to rule out fixed-rail rapid transit, which is generally not a close substitute for the automobile in most American cities.

The ineffectiveness of rail transit follows from the technological constraints on the type of service it can provide. Although offering relatively high speeds between stations, a rail-transit system cannot effectively provide the door-to-door service that makes the auto so attractive. Most rail transit users must drive or take a bus to the station, wait for a train, and then take some other connecting service

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(or walk) to their ultimate destination. And according to time-value studies, people find time spent waiting, walking and transferring two to four times as onerous as time spent moving in the vehicle. Thus rail transit wastes the most expensive kinds of people's time while saving the least valuable.

The experience of the San Francisco Bay Area Rapid Transit (BART) system bears out this observation. Built in the 1960's at a cost of about \$2 billion, BART's service emphasizes very high speeds between the stations on its 75-mile system. To achieve these speeds, BART's stations are far apart and relatively inaccessible, making its service unattractive relative to the automobile. Thus despite a subsidy of over \$4 per trip, BART attracted only 35 percent of its riders from automobiles when it opened. The majority of its patrons were drawn from the bus services that it replaced.

**... vs. the bus**

Perhaps surprisingly, the transit mode with the greatest potential is the lowly commuter bus. Unlike rail transit, the bus has the flexibility to pick up passengers near their homes and drop them off near their jobs, often without requiring transferring. Against this, it has one major disadvantage; typically, the bus must inch along in congested auto traffic, making the total travel time at best the same as the private automobile. Inexpensive solutions to this problem are available in most urban areas, however, by utilizing the excess road capacity which is available in the "reverse" or non-peak direction on a highway. Converting one of these lanes for the temporary use of buses in the peak

direction is an economically efficient way of increasing the attractiveness of transit service. Also, even in the absence of highway-price reform, it partially restores the natural balance between auto and transit use.

One such "contraflow" bus lane was initiated by the Port Authority of New York on the approaches to the Lincoln Tunnel in 1970. It took a mere 10 days to implement at an initial cost of only \$200,000, yet the lane handled as many as 35,000 seated passengers per hour, saving them an average of 15 minutes per trip. A rail-transit line of similar capacity would cost approximately \$125 million today, and would not have the flexibility of the bus at the origin and destination of the trip.

For those corridors which do not have excess road capacity in the reverse direction, a lane in the peak direction can often be used. In many cases, the improved transit service will draw sufficient traffic away from the facility to permit remaining traffic to flow at improved speeds, despite the reduced capacity of the highway. Even if a special lane must be built to accommodate express buses, however, its cost would be far lower than an equivalent rail-transit facility.

The attractiveness of express bus services is reflected in their ability to draw commuters away from automobiles. Special bus-lane services in Honolulu and Miami, for example, drew almost four-fifths of their users from the automobile. Surprisingly, buses are also more energy efficient than rail-transit systems, when allowance is made for both propulsion energy and the energy component of manufacturing vehicles and equipment. A study by the Congressional Budget Office indicates that a bus requires overall about 3,100 BTU's per passenger mile, compared to a figure of 6,600 BTU's/mile for a modern rail-transit system.

**Reawakening private enterprise**

Some transportation economists also propose

unleashing private initiative in the transit industry, which is now severely handicapped by highway-pricing policies which reduce the demand for transit services. In their view, relaxation of the state and municipal regulations that forbid private competition with public-transit operators could help increase overall transit usage.

Private enterprise could probably provide profitable commuter-bus service, particularly if express lanes were made available or if the buses were driven by part-time labor. Such service already exists where permitted by local regulations. Specialty Transit Company, for example, provides service between various points in rural Missouri and a McDonnell-Douglas Corporation plant in St. Louis County, Missouri. Using sixteen buses and part-time drivers, Specialty Transit provides commute service for its 400 daily users for less than 2¢ per passenger mile.

Other, less conventional forms of transit — such as the jitney — might also emerge if regulations were relaxed, according to Ross Eckert of the University of Southern California. Jitneys typically are small, privately-owned vans that follow somewhat less regular routes than buses, but unlike taxis, pick up passengers until they are full. At one time, 62,000 jitneys operated in the United States, but in response to pressure from street-car operators, most municipalities eventually curbed their operation. Jitney services continue to operate legally today in a few locations, including San Francisco's Mission Street corridor. Others operate on the fringe of the law in Harlem and parts of Chicago and Pittsburgh. While providing needed transportation, jitneys also offer employment for local low-skill workers who often hold mid-day jobs in addition to driving jitneys during commute hours. The U.S. Senate in 1977 considered legislation to remove restrictions against jitney operation, but the bill died in committee.

#### **Subsidizing the passenger**

Perhaps the most novel suggestion for transit

reform concerns the way in which subsidies are administered. At the present time, most transit subsidies are provided directly to the *suppliers* of the service. The motivation to provide reliable, courteous transit service is generated only indirectly through the politics and procedures of governing boards, which also decide what routes should be served.

Some economists have recommended that *passengers* be given the subsidies in the form of trip vouchers, so that each transit system would receive its subsidy only after receipt of its passengers' vouchers. The public or private transit operator would then have an incentive to provide attractive service in order to increase its operating revenue. The Urban Mass Transit Administration has experimented with such voucher systems on a small scale, and found them effective in stimulating responsive transit service. Additionally, the provisions of transit subsidies to users lessens the need for public ownership of transit companies, since profit-oriented firms could just as easily provide the service. For those technologies with limited economies of scale (commute buses, for example), it may be possible for free entry and competition to prevail as they did in the very early days of the transit industry.

The reforms discussed here represent a major break with policies which, for many decades, have defined a rather modest role for transit. Economists argue, however, that such a break may be necessary if we are to provide effective passenger-transportation services in an era of limited real and fiscal resources.

**Randall Pozdena**

FIRST CLASS

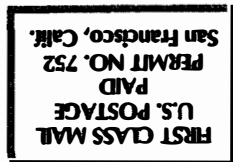
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**BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT**

(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 11/21/79	Change from 11/14/79	Change from year ago @	
			Dollar	Percent
Loans (gross, adjusted) and investments*	134,881	- 176	+ 15,968	+ 13.4
Loans (gross, adjusted) — total#	111,982	- 42	+ 15,791	+ 16.4
Commercial and industrial	31,144	+ 64	+ 2,869	+ 10.1
Real estate	42,403	+ 207	+ 8,798	+ 26.2
Loans to individuals	23,948	+ 72	NA	NA
Securities loans	1,558	- 31	NA	NA
U.S. Treasury securities*	7,293	- 128	- 997	- 12.0
Other securities*	15,606	- 6	+ 1,174	+ 8.1
Demand deposits — total#	44,554	-1,349	+ 3,313	+ 8.0
Demand deposits — adjusted	31,073	-1,068	+ 1,517	+ 5.1
Savings deposits — total	28,836	- 57	- 1,517	- 5.0
Time deposits — total#	58,183	+ 644	+ 9,190	+ 18.8
Individuals, part. & corp.	49,711	+ 532	+ 9,961	+ 25.1
(Large negotiable CD's)	21,824	+ 359	+ 2,685	+ 14.0
<b>Weekly Averages of Daily Figures</b>	<b>Week ended 1/21/79</b>	<b>Week ended 11/14/79</b>	<b>Comparable year-ago period</b>	
<b>Member Bank Reserve Position</b>				
Excess Reserves (+)/Deficiency (-)	- 8	+ 36	- 8	
Borrowings	187	+ 277	+ 51	
Net free reserves (+)/Net borrowed(-)	- 195	- 241	- 59	
<b>Federal Funds — Seven Large Banks</b>				
Net interbank transactions	+ 269	- 389	+1,582	
[Purchases (+)/Sales (-)]				
Net, U.S. Securities dealer transactions	- 6	+ 208	+ 33	
[Loans (+)/Borrowings (-)]				

\* Excludes trading account securities.

# Includes items not shown separately.

@ Historical data are not strictly comparable due to changes in the reporting panel; however, adjustments have been applied to 1978 data to remove as much as possible the effects of the changes in coverage. In addition, for some items, historical data are not available due to definitional changes.

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