INTRODUCTION

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• PAPERS in this RECORD are of high quality and contribute a good deal of useful information. With that overall judgment rendered, I turn to specifics.

Tye reviews and demolishes arguments for capital grants and establishes some good empirical evidence on the rational economic behavior of transit companies. The argument for capital grants to transit might be associated with the general rule that an enterprise ought to cover operating costs or else it would be rational to go out of business. Of course, that argument makes sense only after capital has been sunk. Before capital funds have been expended, they constitute a variable input, and I see this as the essence of Tye's message: What is fixed ex post is variable ex ante. If we view both capital and operating costs as variable inputs and if we assume that an expansion of transit is a given policy, then the theory of the firm implies that cost minimization will occur on the firm expansion path. In the special case of constant returns to scale, or of any Cobb-Douglas function, the expansion path is a straight line from the origin. If transit firms are currently at an optimum, as indicated by Tye's evidence, then in these special cases both capital and operating expenditures should be expanded in the same proportion. Of course, the real-world expansion path may not be a straight line, but I offer the observation as a first approximation to best policy.

Roth has a good review of regulation and subsidies for urban buses and gives a worldwide review of cases. He makes an interesting point on the scheduling of buses. Rivals competing for a share of the market will tend to leave at the same time. This seems analogous to spatial competition where 2 rivals tend to locate next door to one another in an attempt to capture a maximum share of the market: Witness gasoline stations or supermarkets on adjoining corners. The situation might call for regulation to minimize costs to consumers, and this is the position Roth takes on scheduling. Roth's evidence on public versus private ownership in transit furnishes ammunition to advocates on each side of the question, but the preponderance of evidence favors the private ownership side. In Calcutta and Caracas, the private performs better than does the public; however, in Manila, the private engages in "cutthroat" competition which could be in the public interest and also imposes a great many negative externalities, e.g., via the deplorable driving habits of the drivers.

Kurnow, Brief, and Silberman pull together data from many sources to develop an integrated set of transportation-dollar magnitudes for the New York region. They demonstrate that the New York region pays more for transportation than it receives; it is then argued that this "surplus" could and should be applied to the financing of transit. They state the following basic propositions that support their position: "Adequate funds for financing all public transportation services in the region would be ensured if (a) all funds earned in transportation at each level of government were pooled; (b) transportation services had priority in the use of funds earned in transportation; (c) the allocation of funds earned in transportation to a region were in rough proportion to the money earned in it; and (d) all transportation planning and administration were coordinated in one agency for the region or in a group of cooperating agencies."

Point c argues that spending in the region should equal earnings in the region. But it is plausible that regional residents use more road mileage (or, more precisely, more value of road mileage) outside the region than nonresidents use within the region. There may be more New Yorkers driving in Montana than Montanans driving in New York; the excess may occur even in value terms, i.e., after we account for higher road costs per mile in the New York region. Hence, there may be something of an ethical case for a surplus.
Point b, that transport services should have priority on transport funds, is worth contrasting with point a, that all transport funds should be pooled. But if we accept pooling, why can we not pool transport with education, welfare, and so on? If we believe in applying funds to the activities that yield those funds, why not spend the funds on the modes that are their source? The case for transit subsidy is not made explicit by Kurnow, Brief, and Silberman, but Roth and Sherman do present a number of arguments for such subsidy.

One argument is that of redistribution to the poor. Roth points out that there may be more effective means of redistribution than transit subsidy and suggests travel coupons, including their use for taxi service. If society insists on the use of transit by the poor (taxis being too 'rich'), it might be cheaper to subsidize the relocation of poor people to locales near profitable transit lines rather than to subsidize losing lines. Finally, there is the usual argument that we would do better to give the poor money to spend as they please rather than coupons limited to a specific commodity.

A second major argument for transit subsidies involves negative externalities imposed by automobile drivers on others (air pollution, noise, and accidents) and on themselves (the previous items plus congestion time losses). If we admit the case of externalities on others, it is not obvious that transit subsidy is the best, or even an effective, response. A case can be made for emission regulation (and EPA regulation will have major impact) and for effluent charges. But the latter policy might yield higher transit fares, for many forms of transit impose a considerable amount of negative externalities.

Turning to congestion externalities imposed on themselves by automobile drivers, Sherman gives a clear and detailed statement of the case for congestion tolls in terms of a marginal social cost argument. Transit subsidy is seen as a second best approximation to congestion tolls and has greater political feasibility. He argues that raising automobile travel prices or lowering transit prices or both will move us toward setting marginal social cost equal to marginal social benefit.

I have some qualms. We may well ask why it is that people are so resistant to congestion tolls. The analysts insist that people will be better off, but their prospective beneficiaries resist the argument (see St. Clair's statement, for example, in Sherman's footnote 3). It is somewhat worrisome that the analysts are going to make people better off in spite of themselves. (Of course, people may not act in their best interests or assess risks correctly; very few automobile occupants fasten their seat belts, for example.)

It is my hunch that the recommended congestion toll for automobile travel may be too high and may indeed correspond to a monopolistic price. (This could be the source of some of the resistance.) On the product market, competitive equilibrium involves the intersection of marginal cost or supply and average revenue, not marginal revenue. On the factor market, competitive equilibrium involves the intersection of value of marginal product or demand and average factor costs, not marginal factor costs. Hence, the intersection of 2 marginal curves seems suspect.

The proposed equation of marginal social costs and marginal social benefits seems to involve costing on the consumer side and neglect of cost of production or cost on the producer side.

Consider the application of the marginal social cost idea to housing. If a new family comes into an area, they will bid up the price of housing. The new price obtained is the marginal cost of housing to producers, but it is an average cost to consumers. Because all previous consumers now pay a higher price, there is a marginal social cost that is above market price. It follows by the traditional social cost argument that we ought to set a higher price than the market price to the new entrant: In effect, this will help keep the rascals out. I think the argument applies in the setting of transportation as well. In both cases, the higher price appears to involve a monopolistic approach to policy.

This is not to deny that congestion tolls can improve matters, for they will allow people to trade money for time. Put another way, tolls will move us out of a situation where the charge for road use is 0 dollars and all time cost. Vickrey illustrates some of the gains to be had by such user tolls. However, though I believe that people in
general will be better off through the institution of tolls, I doubt Vickrey's assertion that everyone will be better off. Initially, with both a time charge and a money charge, everyone will be faced with a higher total price. After redistribution of trips, some people will change their time pattern of travel. I expect this will make some people worse off. If one has to leave work earlier, this should be a cause of disutility. I would go further and question Vickrey's assumption of a constant value of leisure time; value per minute is quite likely to be a function of hour of the day. Finally, Vickrey does not devote much concern to the distribution of the funds collected through tolls. We move back to the ethical questions of pooling, noted in response to Kurnow, Brief, and Silberman. Here, I think Sherman is on stronger grounds when he advocates a lump-sum return of tolls to the road user. Further, why not consider using the funds to build more roads, improve existing roads, and compensate outsiders harmed by externalities imposed by road users?