

Abridgment

Evaluation of Employer-Based Transit Pass Programs

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Programs encouraging the distribution of monthly transit passes by employers have been implemented by many U.S. transit agencies over the past three years. In many cities, employers are contributing to the cost of the pass. Despite the increasing participation of both employers and employees, concern over the impact of these programs on revenue is causing many transit agencies to reexamine them. There is a need for more rigorous evaluation procedures to examine the cost and benefits to all parties involved. Included is a discussion of program costs and benefits to employers, employees, transit agencies, and the general public.

Programs encouraging distribution of transit passes by employers have become increasingly popular among U.S. transit agencies in the past three to four years. A natural outgrowth of these programs is an employer contribution to the price of the pass. The growth in transit pass contributions as an employee benefit can be attributed to several factors involving economic conditions and energy problems:

1. The rising cost of providing parking to employees has encouraged many downtown employers to promote the use of transit by their employees.
2. Growing interest in energy conservation has encouraged employers to promote the use of transit by their employees.
3. Employees see contribution to employee transit as a relatively inexpensive and popular benefit to provide.
4. Employer distribution of transit passes increases convenience for employees, particularly where payroll-deduction systems are used. Since many companies have traditionally subsidized employee parking, transit contributions provide a good method of equalizing benefits.
5. Employer distribution of transit passes is part of an overall trend toward transit fare prepayment. Rising fares, more complex fare structures, modern marketing techniques, and automated fare-collection technology are among the factors contributing to increased interest in transit fare prepayment.

Employer-based transit pass programs have been administered primarily by marketing personnel and have been designed to increase ridership and create a positive image of transit in the community. Recent financial difficulties faced by many agencies, however, have resulted in conflicts between financial and marketing departments over the desirability of these programs. Monthly passes generally provide some level of discount for the daily rider at a time when there is strong pressure to maximize revenue. In addition, employer contribution to transit tends to encourage peak-hour ridership, and many agencies have no additional peak-hour capacity.

These conflicts result partly from the fact that programs of this type are often not evaluated in a systematic manner. A full evaluation would involve not only costs and benefits to the transit agency but those to the other participants, the employer, and the employee.

Included here is a discussion of costs and benefits of employer-based monthly transit pass programs. Although other passes, such as annual or weekly passes, are sold by some transit agencies, monthly passes will be the focus of this report. This paper is based on research involving 35 transit agencies and more than 30 employers throughout the

United States conducted for the Urban Mass Transportation Administration. An evaluation methodology is developed for use in analyzing the costs and benefits of these types of programs.

ISSUES IN COST-BENEFIT EVALUATION

Because transit is a public service, nearly always requiring government subsidy, traditional types of cost-benefit analysis are often not appropriate to transit programs. Intangible benefits and the furthering of public goals such as reduction of traffic congestion and/or air pollution are desired benefits that may be difficult to quantify with a reasonable degree of accuracy. These intangible benefits may be important enough to justify implementation of a program that would not be implemented on a purely financial basis.

Evaluation of costs and benefits of these programs will vary for each of the three primary groups: transit agencies, employers, and employees. The cost-benefit considerations for each group are summarized below and are discussed in more detail in the remainder of the paper:

1. Employees decide whether to purchase a pass almost entirely on economic considerations. Although mode choice is influenced by qualitative variables such as comfort and convenience, an employer contribution to the employee's transit expense can influence mode choice in a very visible way.
2. An employer's decision to participate in a transit pass program will depend heavily on savings that can be achieved from reduced parking costs. The decision may also be influenced by long-term considerations, such as trends toward greater employee benefits and improving the public image of the organization.
3. Transit agencies have in the past been willing to sustain financial losses from existing riders in order to attract new riders with the pass discount. This is part of an overall marketing strategy toward cashless fare payment.

EMPLOYEE COST-BENEFIT EVALUATION

There is clear evidence that regular transit riders respond primarily to economic incentives in deciding whether to purchase a transit pass. Short-term monthly pass discounts provided under Service and Methods Demonstrations in Phoenix, Austin (1), and Sacramento (2) demonstrated that regular transit riders will shift from cash fare payment to passes when a clear economic incentive is provided.

Most transit agencies have set a monthly pass price based on 17-20 round trips per month. Although most months have 20-22 working days, travel, vacation, sick time, and occasional trips by automobile and carpool reduce the breakeven point for most commuters. Only in larger cities, where non-work transit trips and transfer charges are common, have passes based on 20 round trips or more been sold in large numbers. An employer contribution of 20-25 percent of the pass price will reduce the breakeven point to approximately 15 round trips. This will make the pass attractive to marginal buyers (including those not currently using transit)

Table 1. Estimated employer transit contributions.

No. of Employees	Employees Participating		Subsidy (%)	Estimated Annual Cost (\$)	Monthly Cost per Employee (\$)
	No.	Percent			
5000	3000	60	100	500 000	8.33
1300	465	36	17.5	16 000	1.02
1800	1030	57	12.5	40 000	1.85
1700	950	56	43	150 000	7.35
3000	340	11	21	26 000	0.72
1100	270	25	50	25 000	1.89
550	110	20	50	11 000	1.67
3050	676	22	12-33	135 000	3.68

Table 2. Parking fees charged by employers (September-October 1980).

City	Type of Business	Location	Type of Lot	Monthly Charge (\$)
Seattle	Hospital	CBD periphery	Surface	25
Minneapolis-St. Paul	Government	CBD	Garage	35-65
Minneapolis-St. Paul	Bank	CBD	Garage	15
Chicago	Insurance	Non-CBD	Garage	8-15
Des Moines	Bank	CBD	Surface	8
Pittsburgh	Retail store	Non-CBD	Garage	25-30
Boston	Insurance	CBD	Garage	15

and enable the transit agency to maintain a higher price.

The sale of transit passes through the workplace provides both an increased level of convenience and the opportunity to educate employees on the relative costs of automobile commuting and transit commuting. Although a combination of marketing efforts and employer contribution may encourage some automobile commuters to switch to transit, the major beneficiaries of employer contributions will be regular transit riders.

EMPLOYER COST-BENEFIT EVALUATION

The primary cost of employer-based pass programs to the employer is the amount of contribution provided to the employee's pass cost. Direct administrative costs are small, generally representing one to three days of clerical time per month. The contribution to the cost of the pass represents the major commitment on the part of the employer. A common technique used by employers is to set a total dollar budget for the program and determine the percentage subsidy provided by estimating the number of employees expected to use the program.

Some estimates of employer contributions to employee transit costs are shown in Table 1 for October 1980. An obvious economic benefit of employer contribution to transit is its cost relative to providing parking. Employers in the central business district (CBD) particularly are finding parking increasingly scarce and expensive to provide. As more buildings are constructed on surface lots, demand for parking increases and supply decreases. Employers who must provide additional parking due to expansion are finding land-acquisition and construction costs to be rising at a rapid rate.

Employers contacted for this study estimated construction costs for new above-ground garages at between \$5000 and \$10 000 per space. Amortized over 30 years at 13.5 percent interest, monthly costs per space range from \$57.54 to \$115.08. Estimates of monthly operating costs for garage structures ranged from \$25 to \$45 for a total monthly cost (excluding opportunity cost) of \$82-\$160. For outdoor surface

lots, construction and maintenance costs ranged from \$23 to \$36 per month, also exclusive of opportunity costs.

As Table 2 shows, many employers are charging fees that do not even cover operating costs and that are well below market rates (market rates range from \$50 to \$100 per month in large-city CBDs).

Employer contributions for employee transit ranged from \$1 to \$8 per employee in companies contacted for this project. Parking subsidies (including operating and maintenance costs) ranged from \$8 to \$17 per employee, and in the companies surveyed there were two to four employees per parking space.

In addition to being less expensive, contributions to employee transit provide a degree of flexibility in budgeting that does not exist with fixed parking facilities. Employee transit contributions can be changed on relatively short notice, whereas parking construction costs are committed over a long period of time.

More qualitative potential benefits to the employer include positive publicity for the organization and improved employee relations.

TRANSIT-AGENCY COST-BENEFIT EVALUATION

Transit agencies tend to evaluate pass programs primarily in terms of increased ridership, net changes in passenger revenue, or both. There are also potential operational cost impacts that will be felt when large numbers of passes are sold. A cost-benefit evaluation of employer-based pass programs by transit agencies should address several issues, including the following:

1. Three of the direct benefits of pass sales to the transit agency are improved operational efficiency through reduced boarding times, improved cash flow through receipt of sales revenue at the beginning of the month, and reduced costs in handling of farebox revenue. Measurement of these impacts is difficult and empirical evidence is limited. It is clear, however, that these impacts will be limited unless large numbers of passes are sold on high-volume routes.

2. Promotion of pass sales through employers may attract new peak-hour riders to the system at a time when many systems are saturated in the peak hour. Marginal increases in peak-hour service are very expensive to provide, and many agencies simply do not have vehicles available. These potential costs have been recognized by a number of agencies that promote their programs in areas where there is excess transit capacity or in conjunction with flexible-hour policies.

3. Because passes provide a certain number of free rides, there is a net revenue loss from existing riders. In order to show a positive impact on revenue, enough new riders must be attracted to the system to offset this loss. The major components of the program cost-benefit analysis can be summarized in the following equation:

$$NC = (RG - RL) + AD \tag{1}$$

where

- NC = net program cost,
- RG = revenue gained from new riders attracted by pass program,
- RL = revenue loss from discount received by current riders, and
- AD = administrative costs of program.

Employer contribution enables the transit agency to charge a higher price for the pass but still

present an attractive price to the employee. The employer contribution can thus help to improve the overall revenue position of the transit agency.

SUMMARY

With reductions in public funding for transit service, increased involvement on the part of employers will be important to the viability of transit service. For employees, benefits are in the form of reduced commuting costs, whereas employers can either cancel or defer plans for costly new parking facilities.

For transit agencies, the cost-benefit issues are more complex. Many programs have been initiated with a pure marketing focus and with little concern for revenue impacts. With fare revenues likely to become a larger portion of total revenues, these programs will come under increased scrutiny, espe-

cially concerning the level of discount provided to regular riders. The continued existence of employer-based transit pass programs will rely heavily on rigorous analysis of their financial impacts on the transit system.

REFERENCES

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Average Transit Trip Lengths by Racial and Income Classes in Atlanta: Equity of Flat Fares Based on Trip Length

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Transit fares that are the same for all trips made regardless of trip length have decreased in favor recently. New preference is being given to distance-based fares, which offer potential to financially pressed transit operators for increasing revenues without increasing all riders' fare payment. One argument that has been advanced favoring distance-based fares is that flat fares are not equitable. Since low-income riders generally make shorter trips than do high-income riders, high-income riders receive more benefit for the same fare payment. This generalization is based on the presumption that all transit trips are radial to and from the central area and that low-income riders live within or close to the central area, whereas high-income riders live in suburban areas. This presumption is based on a concept of urban development patterns and transit service distribution that may or may not be true in all urban areas. An analysis of trip-length patterns for low- and high-income minority and nonminority riders in Atlanta, Georgia, shows that there is no significant variation in trip-length distribution by race and income class, except that high-income minority riders generally make shorter trips than do both groups of low-income riders as well as the high-income nonminority riders. The generalization that low-income and nonminority riders make shorter trips than high-income nonminority riders is shown to be not valid in this one case and therefore may not be used as a general basis for supporting distance-based fare systems. Distance-based fare systems may be desirable in many instances but must be justified on individual merits and not as a general rule.

During the 1970s, transit fare policies were often guided by the following two basic precepts:

1. Fares should be stable; that is, they should be held at nearly constant levels over long periods of time; and
2. Fares should be low, both absolutely and relative to the cost of the service provided and to the cost of the competing mode.

These precepts were sometimes translated into practice, in part through systemwide flat fares with free transfer.

More recently these precepts have been more likely to be questioned. Rising costs, real and inflationary, have increased the necessity of generating more revenue through fares. A fixed amount of net revenue increase may be obtained by raising all

fare payments by X amount or by raising some proportion of fare payments by an amount nX . Distance-based fares are an example of this latter approach.

The distance-based fee approach has certain apparently logical imperatives. Generally (but not necessarily always), it costs more to provide for a long trip than it does for a short one. Also, the long trip must be worth more than the short one, since the rider is willing to spend more time making it. Extending this argument, some analysts have also supported distance-based fares vis-à-vis flat fares on the basis of equity, maintaining that wealthier riders make long trips (suburban trips to work), whereas low-income riders make short trips (within the central city). If this is true, then the high-income rider receives more value for the fare than does the low-income rider paying the same amount.

A general statement that flat fares are inequitable, for the above-stated reasons, carries certain presumptions about the income distribution of residents of urban areas. The presumptions are that what might be called the classical ring form of urban development is commonplace. This form of urban development is described simplistically as a central core in which all nonresidential activity takes place, an inner ring containing the residences of all low-income citizens, and an outer ring containing all the high-income residents. (There is also often a presumption that low income is synonymous with minority racial groups.) In this situation, on every working day all the high-income residents will pass through the low-income ring on the way to and from work and will make trips about twice as long, on average, as those by occupants of the inner ring.

Although this type of development is very illustrative in theoretical discussions, whether it actually exists is debatable. Yet transit-pricing theorists are apparently assuming that it does exist