Does transit mean business? Reconciling academic, organizational, and political perspectives on variable transit fares

Paper submitted for presentation at the 2013 Annual Meeting of the Transportation Research Board

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Submission Date:

August 1, 2012

Word Count:

7,334 total, including:
6,334 in text
3 tables (@ 250 words each)
1 figure (@ 250 words each)
Abstract

For decades transportation scholars have argued in favor of differentiated transit fares, which vary by mode, distance, and/or time-of-day. Such fare policies, researchers contend, could greatly increase the efficiency, efficacy, and equity of transit service. However, despite this established research on the benefits of differentiated fares, relatively few transit agencies employ them, and over the past two decades many have actually eliminated differential fares and replaced them with flat fares. Advances in smartcard fare collection technology have reduced the operational obstacles to charging differentiated fares, but with the proliferation of this technology, will transit systems begin implementing differentiated fares?

We find that changes in fare policies are often crisis-induced and budget-driven, and this ad hoc process reflects the multitude of (and sometimes contradictory) goals that transit agencies pursue – including the political need to provide affordable alternatives to automobiles. This suggests that new smartcard technology may be necessary to overcome operational challenges, but not sufficient to overcome political challenges. We also find a significant gap between current practices (of charging flat fares) and beliefs among transit agency officials that more flexible pricing should be implemented. Heard many times over in interviews was deep concern about losing any riders as a result of introducing differentiated fares – despite possible gains in other rider groups or trips made on transit. This fear of losing riders to automobiles, coupled with officials’ reported desires to implement variable fares, suggests that transit agencies should support the adoption of congestion and parking pricing programs, which internalize the costs of driving. Doing so would remove a fundamental barrier to implementing variable transit fares.
Introduction

Public transit systems differ from many other government enterprises in that they charge a fee, or fare, in much the way that private businesses charge for their services. Transit fares are typically of two sorts: flat or differentiated. For decades transportation scholars have argued in favor of flexible, differentiated transit fares, which vary by mode, distance, and/or time-of-day to reflect differences in the marginal costs of service provision (1, 2, 3). Such fare policies, researchers contend, could greatly increase the efficiency, efficacy, and equity of transit service. Research on transit costs suggests that short, off-peak trips tend to be relatively inexpensive to provide, while longer, peak-period trips are more expensive (4). Accordingly, varying fares to reflect these differences in costs would encourage passengers to consume more inexpensive-to-serve trips, and be more judicious in consuming more expensive-to-serve trips, thereby increasing the cost-effectiveness of transit service.

However, despite an established body of research on the potential benefits of flexible fares, relatively few transit agencies employ them, and over the past two decades many have actually moved away from variable fare structures and toward simpler flat fares by dropping zone-based fares.1 Recent technological advances, particularly smartcards for fare collection, have greatly reduced the operational and administrative obstacles to charging differentiated time- or distance-based fares, yet very few transit agencies have used this technology for fare differentiation.

Many observers have argued that, despite the opportunities for pricing innovations presented by smart cards, public agencies are risk-adverse, preferring status quo practices over policy changes (5,6). Maintaining existing policies allows agencies to minimize mistakes and avoid public scrutiny (7, 8). Additionally, Bozeman and Kingsley (9) argue that the amount of risk-taking by organizations is a function of the clarity of agency goals, and public sector goals are often too broad, too vague, or too controversial to evaluate for efficiency and effectiveness (10). Specifically addressing transit pricing, Cervero (11) finds that transit managers must satisfy multiple goals (e.g., capture the cost of service, maximize revenue, reflect the value of service to the user, promote equity, encourage transit use, and redress the underpricing of automobile travel) that combine to make it harder for them to strategically price their services.

Nearly all of this research on transit managers’ resistance to differentiated fares was conducted prior to the rise of smartcards, which make implementing variable pricing far easier and more reliable than in years past. As smart cards become more ubiquitous, will transit systems gradually reverse course and begin implementing differentiated fares? Will political and institutional resistance to variable pricing hold firm, suggesting that implementation was never the principal obstacle? Or have flat fares become so thoroughly inculcated in transit practice that most transit managers are unaware of the now decades old research on the benefits of differentiated fares? In this paper, we review literature on transit fares and pricing, report on findings from in-depth interviews we conducted with California transit officials, and discuss findings from a nationwide survey of transit agency CEOs, planners and analysts, and board members.

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1 Some transit systems divide their service areas into zones and charge higher fares for crossing from one zone to another than for traveling entirely within a given zone. Such systems are in effect a crude form of distance pricing. The London transit system is an example of one using zone-based fares.
What do we know about transit fare setting?

Standard micro-economic theory suggests that, when adequate capacity exists, the price charged for public transit should equal the short-run marginal cost that the last passenger imposes on the system (including other passengers). When supply is maximally utilized, the long-run marginal cost should be used to take into account the marginal capital costs needed to handle additional passenger loads (12). Marginal cost pricing of this type is a pre-condition of “anonymous equity,” an extension of the Pareto improvement as applied to the fair distribution of costs (13).

Despite its theoretical advantages (which we do not discuss in detail here), marginal cost fare-setting in even the most approximate sense is rare. Instead, low, uniform fares and free transfers are the norm. And, because the marginal cost of transit service tends to vary substantially by mode, time of day, distance, and travel direction, flat fares result in substantial internal cross-subsidies among riders.

But how much do transit managers really understand about the marginal costs of their services, and the highly variable per trip subsidies among riders? Revenues for public transit come from a wide variety of sources beyond fares, and are usually earmarked as to their purpose. For example, federal funding for transit in metropolitan areas is exclusively confined to specific capital expenditures (vehicles, facilities, way, etc.), which typically involve a “match” of state or local funds. Likewise, local voter approved taxes and bond issuances are almost always project-specific as well, and are usually devoted to new capital investments. Expenditures for operations are covered by a combination of passenger fares, charter and advertising income, and local, regional, and state subsidies. In 2012, one-third (33.3%) of all transit operating costs nationwide were covered by fares, and two-thirds by government subsidies; 100 percent of transit capital costs are covered by subsidies (14).

Because transit revenues are so extensively earmarked for particular expenditures, transit managers’ motivation to understand and analyze the intricacies of the variable costs of service provision is considerably diminished (4). For example, if a careful analysis showed that rebuilding engines on older buses twice before retirement minimized long run operating plus capital costs, but federal subsidies earmarked for new vehicles cannot be used to rebuild engines on older buses, transit managers have less incentive to trade capital for operating costs, even if there is a strong economic efficiency argument for doing so. Such perverse incentives have resulted in what some analysts have described as “capital bias” in public transit finance (15, 16).

With diminished incentives to track and analyze the marginal costs of service provision, transit managers may be less aware of how dramatically their costs vary by time of day, direction of travel, mode, and so on. Absent such awareness, the motivation to pursue fare structures that reflect marginal costs is likely considerably dampened as well.

Regardless of the form it takes, the fare structure at a given transit agency should ideally reflect the array of goals and objectives transit officials and planners hope to achieve, within a politically constrained environment. A recurring theme in the literature on transit fares and goals, however, is that agencies’ goals are often problematic, being either too broad, too vague, too controversial, or simply absent, which makes it difficult for public officials to make consistent decisions that advance agencies’ goals. The goals a transit manager has in setting fare policy can also conflict and overlap: capturing the cost of service, maximizing revenue, reflecting the value of service to the user, promoting equity objectives, encouraging modal shifts to transit, and providing a countervailing subsidy to transit users because of the underpricing of driving (11).
Other authors comment that public managers lack the clear economic indicators of efficiency and effectiveness available to their counterparts in the private sector, partly as a function of public organizations’ role in addressing complex social functions. While evaluations of performance and innovation in private firms can be measured by levels of profit or satisfaction of stakeholder interests, the evaluation of public sector performance is much more difficult. Public agencies are expected to provide goods and services that cannot be easily packaged for exchange in economic markets and are often at odds with economic efficiency (17).

Moreover, transit agencies are accountable to various stakeholders (elected officials, taxpayers, organized labor, commercial property interests, neighborhood associations, and riders) whose interests are not aligned, and often at odds. Transit agencies are often besieged by multiple, often conflicting service demands, with no overarching interest or objective towards which to steer (18).

The confluence of goals, combined with the challenge of measuring them, makes it difficult for transit officials to develop fare structures that consistently reflect agency goals. Lack of goal clarity also inhibits transit managers’ ability to institute changes to the fare structure, especially regarding any movement to variable fares. And, without the clear direction of overarching goals, transit agencies lack the political capital to adopt fares that support those goals.

In addition to lack of goal clarity, a desire to avoid public scrutiny may also limit more widespread implementation of marginal cost pricing. A controversial decision that turns out poorly may have far reaching consequences for a public agency. For example, Wilson (19) argues that high risk aversion is due to the sometimes staggering political costs paid by an agency when it fails or is perceived to fail at an activity. Moreover, because the public sector does not enjoy a private corporation’s clear division of ownership and control, “public scrutiny of actions by these organizations is immediate” (8). Leaver (7) explains in her “minimum squawk” theory that bureaucrats’ concern for their reputations will prompt them to make decisions that “keep interest groups quiet and mistakes out of the public eye” at the cost of efficiency.

But transit managers regularly (albeit reluctantly) raise fares to cover rising costs, often in the face of considerable political outcry, and these fare increases are often viewed as unavoidable and publicly presented as such. Implementing differentiated fares entails similar political resistance as simple fare increases, but with far less certain benefits. Given both their substantial promise to increase operating efficiency and potential to threaten risk-averse decision-makers, our research seeks to better understand the relationships between costs, fares, and risks in the fare policy decision calculus at U.S. transit systems.

Methodology

Given the enormous challenges that transit agency officials face in delivering efficient and effective transit service while at the same time balancing political risks and scrutiny, we aimed to explore through in-depth interviews and a nationwide survey the following issues:

- The goals, objectives, principles, and practices that guide the structure and setting of fares at transit agencies, including the extent to which pricing reflects marginal costs;
- The extent to which respondents see justification for variable pricing;
- The challenges that respondents foresee with more extensive use of variable pricing; and
Utilization of new technologies and how these have or have not enabled fare policy reform.

To examine these ideas, we conducted two phases of research. The first phase consisted of in-depth interviews with eight officials from four transit agencies about their agencies’ marginal costs of providing services, the kinds of information practitioners deem relevant to making fare policy, their levels of risk tolerance, and their rationales for setting fare policies. These interviews allowed us to evaluate the unique context in which transit agencies operate, where they are expected both to operate “like a business” and to simultaneously address a broad range of social goals. We interviewed officials who worked in finance and service planning units who could discuss with us the role that costs (marginal or otherwise) played in decisions about types and levels of service provided, the fares and prices charged, and the share of total (operating and capital) costs that fares should cover. We selected large agencies because they are more likely to be early adopters of smart card technology (Yoh 2008) and because just a few large systems account for the bulk of all transit patronage nationally. We also selected agencies that had changed fares within the past six months to capture perspectives from those likely to be aware of (and able to accurately recall) the factors motivating changes in transit fare policies.

Findings from our interviews informed the second phase of this research, a nationwide survey of transit operators. To test whether findings from our interviews are commonly held among decisionmakers and practitioners at transit agencies nationwide, we conducted a large scale survey to identify whether there were differences in views on transit costs and fare policies among (1) transit executives such as chief executive officers or general managers, (2) their immediate deputy executives in different functional units such as finance, service planning, operations, etc., and (3) transit agency board members. We chose not to survey other stakeholders, such as passengers, drivers, or business interests, as their influence on fare setting is indirect and via the three surveyed groups.

We identified transit officials to survey through the National Transit Database (NTD) maintained by the U.S. Department of Transportation (2007). We selected those agencies that operated at least one fixed route and then identified the general manager, executive director, or chief executive officer associated with the agency. We supplemented these names by cross-checking them against the American Public Transportation Association (APTA) database of members. Through APTA, we also obtained contact information for staff who had attended a 2010 APTA fare collection workshop. We also identified board members through the APTA member database. The completed survey panel included 415 transit executives, 367 transit staff members and 343 transit board members. All individuals were sent an invitation to an online survey; about one-sixth (182 respondents, or 16%) provided complete responses that are included in our analysis. Of those who reported their titles, 36 percent were CEOs or executive directors, 56 percent were transit agency staff (including financial directors, analysts and planners) and about eight percent were board members. Figure 1 below show the geographic distribution of our sample agencies compared with the agencies included in the NTD data.
Discussion of findings

Clarity of costs and agency goals

In general, most our interviewees reported having little information or knowledge about the costs of service delivery at their agency. Most of those interviewed knew far less about the costs of service delivery than the revenues generated by various services, even among those working in finance departments. For example, one interviewee told us “You can’t just pump a train out and say, well, this train cost this much money… but we do know much more concretely… that the revenues [on express trains] are so much higher.” Similarly, when asked about how their costs vary, another interviewee reported that her staff was not able to isolate or attribute their costs, that any “rules of thumb were elusive” and that they “have no good answer.”

While this was the general sentiment expressed by most of our interviewees, some reported understanding the structure, level, and variance of service delivery costs. However, even when these were reasonably well understood, one interviewee reported, this information
was not always shared or utilized within the organization. For example, staff in the finance
department believed that the variance in the costs of operating each type of service offered were
important to consider in service planning, but not in fare setting. Despite this believe, there was
nonetheless, little coordination between the staff in the finance and service planning departments,
so variable costs were not considered in most service planning decisions. One official in the
service planning unit of a large transit agency put it bluntly: “We’ll never make a cost decision.
Service is based on policy decisions, weighing the costs with the number of people served.” The
independent roles and objectives of departments responsible for finance, fare policy, and service
planning in transit agencies often have few incentives for collaboration, which inhibits the flow
of information and intra-organizational decision-making.

The relatively limited focus on costs in fare setting may be a function of agencies’
metrics for success and performance, which incorporate many factors extrinsic to the
fundamentals of their operations. While interview data provide insight into the nuance and
intensity of reported opinions and observations, survey data can show a broad cross-section of
how agencies approach fare policies. Accordingly, in our survey, we asked respondents to
identify their agency’s three most important goals (Table 1). The most commonly identified
goals are (1) improving mobility and access for everyone, (2) providing cost-effective and
efficient service, and (3) increasing overall ridership. In practice, these three goals often conflict
with one another – improving mobility and access for everyone may help increase ridership, but
policies enacted to accomplish these goals – such as providing services to difficult- and/or
expensive-to-serve areas while charging low, flat fares – can compromise cost-effective and
efficient service.

Responses to this question about agency goals varied little between CEOs, transit agency
staff, and board members, suggesting that those in the transit industry, of all stripes, tend to share
a common perspective on goals, and that these goals tend to be widely diverse. However, there
are a few exceptions to this generalization (Table 1). Agency staff are more likely than CEOs to
cite reducing traffic congestion and providing affordable travel alternatives as goals. Board
members are more likely than CEOs to name providing multi-modal transportation options and
less likely identify increasing ridership as an important goal. Board members are also less likely
than agency staff to cite reducing traffic congestion and increasing ridership as the most
important goals at their agency.
Table 1: Which of these goals does your agency pursue?

<table>
<thead>
<tr>
<th>Goals</th>
<th>All</th>
<th>CEO</th>
<th>Staff</th>
<th>Board</th>
<th>Difference b/t Categories</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>[1]</td>
<td>[2]</td>
<td>[3]</td>
<td>[2]-[1]</td>
<td>[3]-[1]</td>
</tr>
<tr>
<td>Improving mobility and access for everyone</td>
<td>94%</td>
<td>95%</td>
<td>94%</td>
<td>92%</td>
<td>-2%</td>
</tr>
<tr>
<td>Cost-effective, efficient service</td>
<td>92%</td>
<td>92%</td>
<td>92%</td>
<td>92%</td>
<td>1%</td>
</tr>
<tr>
<td>Increase ridership</td>
<td>92%</td>
<td>95%</td>
<td>91%</td>
<td>75%</td>
<td>-4%</td>
</tr>
<tr>
<td>Provide affordable transportation alternative</td>
<td>89%</td>
<td>84%</td>
<td>92%</td>
<td>92%</td>
<td>9%</td>
</tr>
<tr>
<td>Mobility for seniors and disabled</td>
<td>88%</td>
<td>89%</td>
<td>87%</td>
<td>92%</td>
<td>-1%</td>
</tr>
<tr>
<td>Service for poor resident/transit dependent</td>
<td>84%</td>
<td>82%</td>
<td>87%</td>
<td>83%</td>
<td>5%</td>
</tr>
<tr>
<td>Providing environmental benefits</td>
<td>80%</td>
<td>74%</td>
<td>83%</td>
<td>83%</td>
<td>9%</td>
</tr>
<tr>
<td>Build regional connectivity</td>
<td>76%</td>
<td>70%</td>
<td>78%</td>
<td>83%</td>
<td>8%</td>
</tr>
<tr>
<td>Reducing traffic congestion</td>
<td>76%</td>
<td>62%</td>
<td>87%</td>
<td>58%</td>
<td>25%</td>
</tr>
<tr>
<td>Provide service to key destinations</td>
<td>68%</td>
<td>64%</td>
<td>72%</td>
<td>58%</td>
<td>8%</td>
</tr>
<tr>
<td>Expand services</td>
<td>66%</td>
<td>61%</td>
<td>69%</td>
<td>67%</td>
<td>8%</td>
</tr>
<tr>
<td>Provide multi-modal transportation options</td>
<td>62%</td>
<td>57%</td>
<td>62%</td>
<td>83%</td>
<td>5%</td>
</tr>
<tr>
<td>Economic development</td>
<td>59%</td>
<td>56%</td>
<td>60%</td>
<td>67%</td>
<td>4%</td>
</tr>
<tr>
<td>Improve land use</td>
<td>43%</td>
<td>43%</td>
<td>44%</td>
<td>42%</td>
<td>1%</td>
</tr>
</tbody>
</table>

1. Test if the difference between groups is statistically significant; *: significant under 90% level, **: significant under 95%. (p-value is reported)
Setting fare policies: more art than science

We also asked interviewees about the factors that they consider when setting fares, specifically. Our interviewees indicated that systematic evaluations of fare policies are subject to and often displaced by the immediate needs of an agency’s budget. One interviewee characterized the central question in any fare policy debate as: “What fare do you need to make the budget work?” Another said his agency sought to minimize the percentage of costs borne by riders so as to encourage people to ride; they did so by indexing their fares on the consumer price index (CPI) while seeking to maintain existing levels of service. But, according to this manager, constant cost increases make this delicate equilibrium difficult and, ultimately, balancing the budget takes priority. In this case, the substantial recent increase in fare levels at this agency was the result of budgetary crisis, which the interviewee asserted was a relatively more acceptable rationale to the public than any fare change for the sake of increasing economic efficiency.

Citing their “large and diverse” service area population, one manager discussed how so-called “price discrimination” – commonly used in private firms – would not pass political muster with a public transit agency. For example, higher fares for commuters on the agency’s express services would be opposed by the elected officials on the agency oversight board who have long insisted that fares be kept low. At another agency, an interviewee explained that they benchmarked their fares with peer agencies’ and attempted to take into account passenger demand elasticities, but admitted that, “there’s a lot of art; it’s not too much of a science.”

When asked about his agency’s measure of success in fare policy, one interviewee’s reply was quick: “staying out of the news,” a sentiment anticipated by the literature on public sector risk aversion (8) and bureaucrats’ rational reluctance to draw attention that may expose mistakes (7). We observed similar conservatism reported by interviewees’ reports on their agencies’ approach to revenue goals. One reported that her agency was focused on retaining revenue rather than on pursuing new revenue opportunities. She explained that, in the agency’s environment of uncertain and vacillating subsidy support, this focus on revenue retention was a necessity.

We found results consistent with interviews in our large scale survey. First, a vast majority (81%) of respondents report that they consider changes to fares only when forced to by budgetary exigency. And about half (47%) report that public reaction to fare changes are one of the three most important factors they consider when changing fares. Nearly half (45%) as well report that farebox recovery ratio is one of the most important factors to considered in changing fares; this could reflect a desire among respondents to link fares with costs, or it could simply be viewed by respondents as a proxy for budgetary pressures.

While some fare policies closely align with previously identified goals, others appear to directly contradict them. For example, a similar number of respondents indicated that their agencies seek to set fares as low as possible (55%; see Table 3) – which corresponds with improving mobility and access for everyone, increasing ridership, and providing affordable transportation alternatives – as reported their agencies aim to set fares to reflect the cost of service (51%; Table 3), which helps to maximize cost-effectiveness, but not ridership. Put simply, setting fares as low as possible and to reflect costs are two very different things. This finding underscores the difficulty of capturing multiple goals within a single fare policy.
Loss aversion

When asked to identify a chain of consequences if their agencies were to implement variable fares reflecting costs, respondents tended to focus more on the riders they expected to lose, rather than the riders they might gain – a commonly reported phenomenon known as loss aversion (21). For example, most reported certainty that they would lose riders from higher-priced expensive-to-serve trips, such as among peak period riders traveling long distances, but were at the same time skeptical that inexpensive-to-serve short-distance or off-peak travelers might be attracted by lower fares for those trips. The extent to which ridership would change depends on the urban context, economic conditions, traveler demographics, and so on; with information on these factors the ridership effects of fare structure changes could be estimated, though few agencies have attempted this analysis. Absent such information, therefore, any move to distance- or time-based pricing is a decidedly risky policy pursuit.

Transit officials also report that in a world where the cost of driving is artificially low and auto use convenient, transit officials have little choice but to maintain low fares in order to encourage mode shift. Given this unlevel playing field, then, the non-pursuit of marginal cost pricing may be reasonable to expect. But it also suggests that transit officials should support pricing policies such as congestion tolling and parking pricing, which help to internalize the costs of driving. However, as Table 2 shows, transit officials tend to oppose, or are at best lukewarm toward, efforts to pricing the externalities of automobile travel. Just four in 10 of those surveyed support market-rate pricing on on-street parking, and just 27 percent support high-occupancy/toll (HOT) lanes; this contrasts dramatically with seven in 10 who support increased carpooling.

Table 2: Support for other transportation programs and policies

<table>
<thead>
<tr>
<th></th>
<th>Support (%)</th>
<th>Neutral (%)</th>
<th>Oppose (%)</th>
<th>Do Not Know (%)</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car pooling</td>
<td>70%</td>
<td>11%</td>
<td>17%</td>
<td>2%</td>
<td>138</td>
</tr>
<tr>
<td>Car sharing</td>
<td>56%</td>
<td>17%</td>
<td>26%</td>
<td>1%</td>
<td>131</td>
</tr>
<tr>
<td>Market-rate on-street parking</td>
<td>40%</td>
<td>23%</td>
<td>34%</td>
<td>4%</td>
<td>124</td>
</tr>
<tr>
<td>High occupancy toll (HOT) lanes</td>
<td>27%</td>
<td>17%</td>
<td>30%</td>
<td>25%</td>
<td>168</td>
</tr>
<tr>
<td>Premium transit fare for peak periods</td>
<td>20%</td>
<td>16%</td>
<td>62%</td>
<td>2%</td>
<td>132</td>
</tr>
</tbody>
</table>

Interest in variable pricing of fares is mixed

Despite the reported practices of setting fares based on reaction to budgetary demands and fiscal crises, creating fare policies that escape public scrutiny, and doing so without clear knowledge of the effects of pricing on riders, there is some – albeit minimal and mixed – interest in variable pricing strategies. Among those agencies that expect to adopt smartcard fare collection technologies in the near future, 55 percent report that they will use the technology to introduce fares that differ by mode, 24 percent report interest in introducing zone- or distance-based fares, and 18 percent expect to increase the use of time-of-day fares. This level of interest may imply
that some of the resistance to variable fares can be attributed to their administrative difficulty absent the use of smartcard technologies; however, survey results among those who have already adopted smartcards show a different story: Only 18 percent have used smartcards to introduce differentiated fares by mode, six percent by zone or distance, and six percent by time of day. This may be explained by a possible spurious correlation (e.g., some intrinsic difference between late and early adopters explains why late adopters are more interested in variable pricing), or early adopters may still be in stages of implementing smartcards but will – in the near or distant future – use them for variable pricing.

Other evidence from our survey shows some (though very minimal) interest. Table 3 summarizes differences between what respondents say what their agencies currently do with respect to fare policies, as well as their views on what they think their agency ought to do. While just 10 percent of respondents report that their agency varies fares by time of day, more than a third (35%) of all respondents think that time-of-day pricing is a good idea. This is a remarkable gap between beliefs and policy practice, which suggests that a substantial minority of transit managers, staff, and board members understand the nature of variable costs in public transit and the merits of time-of-day pricing to address them. Relatedly, while a third (33%) of respondents report that their agencies employ some form of distance-based pricing, nearly half (46%) think that such policies are a good idea. These observed differences are statistically significant at the 0.01 level.

Table 3: Does your agency do this? Do you think it should?

<table>
<thead>
<tr>
<th></th>
<th>Does agency do this?</th>
<th>Do you think it should?</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Set fares as low as possible</td>
<td>55%</td>
<td>149</td>
<td>52%</td>
</tr>
<tr>
<td>Set fares to reflect costs of the service</td>
<td>51%</td>
<td>150</td>
<td>59%</td>
</tr>
<tr>
<td>Offer special fares for groups, events, etc.</td>
<td>49%</td>
<td>152</td>
<td>63%</td>
</tr>
<tr>
<td>Set fares to cover budgetary shortfalls</td>
<td>42%</td>
<td>151</td>
<td>48%</td>
</tr>
<tr>
<td>Vary fares based on distance traveled</td>
<td>33%</td>
<td>154</td>
<td>46%</td>
</tr>
<tr>
<td>Set fares based on riders' ability to pay</td>
<td>28%</td>
<td>149</td>
<td>33%</td>
</tr>
<tr>
<td>Set fares based on riders' willingness to pay</td>
<td>26%</td>
<td>144</td>
<td>35%</td>
</tr>
<tr>
<td>Vary fares based on time of day</td>
<td>10%</td>
<td>154</td>
<td>35%</td>
</tr>
</tbody>
</table>

Note: We use a t-test to test if the difference between "Does your agency do it?" and "Do you think it should?" is statistically significant. ***1% level; **5% level; *10% level

**Conclusion**

While the demand for transit service is relatively price inelastic (11, 22), research has shown that, ceteris paribus, the difference between the highest and lowest average transit fares can halve or double ridership (23). Thus to the extent that high levels of transit use contribute to laudable public goals such as congestion mitigation and reduced emissions, transit fare structures and levels are very important. “Fair” fares are also critical in meeting transit’s more understated
but nevertheless important role as a social service for their riders who are profoundly and even increasingly poor (1, 2). Our interview and survey results collectively suggest three principal findings with respect to transit fare setting:

**Agencies are risk-averse and seek to minimize public scrutiny of any fare changes.**

The survey results emphasize that transit officials seek to ensure their actions avoid public scrutiny and negative publicity, which substantially inhibits implementing variable cost pricing for two reasons. First, implementing variable fare pricing in almost all cases would be a radical departure from the flat fare status quo, and would thus subject a transit agency to financial scrutiny, heightened media attention, and increased lawmaker inquiry – all of which transit officials report they seek to avoid. Secondly, managers’ concerns over the negative consequences of fare changes appear to be so embedded that they report focusing far more on the riders they might lose from any fare changes than the riders they might gain by implementing, for example, variable fares. They are, in other words, highly loss averse. Compounding this is also little understanding of the likely ridership gains and losses that might accompany distance- or time-based pricing.

**With respect to fare policies, transit agencies tend to be reactive to budgetary pressures and reluctant to change fare structures when changing fare levels.**

Rational (i.e., cost- or criteria-based) fare setting policies are viewed as important (and a possible strategy for improving an agency’s long-term fiscal health), but in practice transit fare setting appears to be almost exclusively budget-driven. Fare increases are more often than not induced by fiscal crises, implying a focus on near-term responses to fiscal shortfalls, rather than systematic evaluation of fare policies. Because transit systems depend so heavily on subsidies, large swings in tax revenues – especially during the current, prolonged economic downturn – can make transit budgets volatile. Economists have long asserted the superiority of cost-based pricing to the currently predominant budget-based approach (23). Such cost-based fare structures and regular adjustment to levels need not be coupled with service reductions, and budget crises are more likely avoided. This sort of incremental cost-based fare adjustment is relatively common in the private sector, among airlines and shipping companies, and among public transit operators in Canada and Europe, but is largely unknown among U.S. transit systems.

Findings also suggest that the crisis-induced and budget-driven fare setting processes may not themselves be the problem, but rather are a manifestation of unclear or contradictory goals. Clearly defined and congruent agency goals and objectives allow staff to work toward given objectives, and board members to defend their decisions in light of these objectives. But given the often competing and contradictory goals for public transit (reduce congestion and emissions, serve the needs of the poor and disabled, keep subsidies low, provide quality employment for workers, keep fares low, etc.), goal-driven pricing of transit services has proven elusive.
There is some, albeit limited, interest in distance- and time-based fares, especially among agencies that have or soon will introduce smart cards.

While scholars and researchers have long argued for transit pricing based on principles of economic efficiency, in practice, most agencies pursue fare policies that appear to favor administrative efficiency (e.g. keeping fare collection simple) and effectiveness (e.g. simple and low transit fares, unlimited use passes that reward frequent riders). The survey results underscore that even with increasing technological ability to do so, a majority transit agencies are unlikely to implement distance-based or time-of-day pricing anytime in the near future.

This suggests that while resistance to variable pricing remains widespread, at least some of this resistance is likely due to the operational challenges of implementing differentiated pricing in the absence of smart cards. And as those operational challenges are reduced by smartcards, the longstanding trend away from differentiated fares may begin to reverse.

Finally, our survey revealed a significant gap between current practices (of charging flat, low fares) and beliefs among transit agency officials (that more flexible pricing should be implemented). Heard many times over in interviews was the expressed aversion to losing any riders as a result of differentiated fares – despite possible gains in other riders or trips made on transit. This fear of losing riders to automobiles, coupled with officials’ reported desires to implement variable fares, suggests that transit agencies should support the adoption of congestion and parking pricing programs, which internalize the costs of driving. Doing so would remove a fundamental barrier to implementing more sustainable, equitable, and efficient fares policies.

Acknowledgements

This research was funded by the University of California Transportation Center (UCTC) and the University of California Multi-Campus Research Initiative (MRPI) on Sustainable Transport. We are grateful for the opportunity to conduct this research. Any errors or omissions are the responsibility of the authors and not the funding organizations.

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