

Can Privatization Solve All of Chicago's Public Transportation Problems?

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In the past fifteen years, private operation of urban transit services has been transformed from being a radical Thatcherite or Pinochet-era experiment to almost the norm. Today the cutting edge is the introduction of competition into rail services. Private operation of urban bus services has become passé and is no longer the subject of academic interest and debate. However, there is an exception – the major cities in the United States. This is quite curious given the traditional American preference for private enterprise, as witnessed by the private rather than public ownership of utility companies.

In Chicago there has been a reluctance to consider privatization due to memories of the poor financial performance of the predecessors of the Chicago Transit Authority (CTA), including the financial collapse of Samuel Insull's empire, and the dubious-if-colorful dealings of Charles Yerkes. Indeed it is possible to argue that the most successful period for transit service in Chicago was the first seventeen years of the CTA's existence. Under the leadership of General Manager Walter McCarter and Chairmen Harrington, Budd and Gunlock, the CTA existed as an unsubsidized municipal corporation that was repaying its revenue bonds and financing rolling stock purchases. However, after 1964 things went horribly wrong. In many ways the objectives of privatization are to reverse some of the bad things that happened.

What is Privatization?

Privatization can take many forms, ranging from the transfer of a public monopoly to private ownership to complete deregulation with no controls on entry, prices, and levels of service. For more than fifteen years I have advocated a middle ground, an approach which has come to be known as competitive contracting (Savage, 1985, 1993). This is particularly applicable to bus services. Under this system, monopoly rights to operate individual routes for a period of three to five years are put out to bid. Depending on the type of contract used, firms bid on the basis of the cost or the amount of the subsidy required to provide service. Typically the public authority specifies the level of service to be provided, the fares to be charged, and arranges for the marketing of the network of services and the sale of system-wide passes. The best known example of such a system is London.

I would also advocate that the existing CTA bus operating division be broken up into smaller units, and sold to the private sector, although I would be open to retaining some in-house capability to protect against the forming of private cartels that drive up contract prices. These ex-CTA companies would then compete against each other and against existing private sector firms to win the contracts. The CTA would continue to exist, but as a marketing and procurement organization.

While these proposals may sound very radical to a Chicago audience, they would be regarded as rather conservative by worldwide standards. Many advocate total freedom in deciding on what services to offer and what fares to charge. I personally believe that competitive contracting promises greater long-term benefit than complete deregulation for three reasons.

First, riders prefer integrated ticketing and easy transfer between bus routes and between bus and rail. It would be impossible to maintain such a coordinated system in a deregulated

environment. One of the CTA's major accomplishments was forming a single, more user-friendly system out of disjointed streetcar, rapid transit, and bus companies. It is notable that in the early decades of the twentieth century, there was an active "one city, one fare" campaign to require transfer tickets that would be accepted by all operators. This was only achieved in 1943 during a period when the legislation to form the CTA was being drafted and debated.

Second, riders prefer a predictable system. Riders make long-term decisions on residential locations and workplaces based on a known system of public transportation. The upheaval of complete deregulation, with unpredictable entry and exit by different companies on different routes, combined with unpredictable fares, would encourage people to use automobiles. There is evidence that this has occurred in the wake of deregulation in British cities outside London.

Third, a rolling program of relatively small bundles of work coming up for bid encourages small firms to compete for contracts. In London there is still active competition when contracts come up for bids, whereas in the rest of the country which was completely deregulated, large holding companies have emerged that dominate areas and can stifle potential competitors.

Of course, there is a downside of competitive contracting compared with complete deregulation. It is possible, at least in the short term, that the lack of on-the-road competition may not be as effective at eradicating cost inefficiencies. It is also possible that the full entrepreneurial spirit in providing innovative service patterns and methods of operation will be lost. A competitive contracting system is still one where public-sector planners determine what services will be offered.

Despite these disadvantages, my opinion is that on balance competitive contracting brings about greater net social benefits than full deregulation. But is it a panacea? In the remainder of this paper I explore whether privatization can cure all of the ills of transit in Chicago. I will argue that it will be an effective tool for removing cost inefficiencies, but its effects on providing innovative services and appropriate fares and service levels are more questionable.

Privatization Can Help: Removing Cost Inefficiencies

Without doubt the major attraction of privatization is the prospect of reduced operating costs, with the hope that more and better services can be provided with the same budget. There is ample evidence that considerable inefficiency has crept into the CTA. This can be shown by a few graphs dealing with the labor market. This is not to say that inefficiencies have not developed elsewhere. It is commonly argued that suppliers of capital equipment have also earned excess profits, known as "economic rents," in recent decades. Nevertheless labor represents three-quarters of all operating costs and should be a focus of attention.

Figure 1 shows the hourly wages for bus drivers (bold dashed line) and the labor cost per employee (bold solid line) for the CTA. These data have been corrected for inflation and expressed as an index with the value in 1948 set as one hundred. The latter data include overtime payments as well as other employer-paid fringe benefits. These data are compared with a similar index of the United States average hourly wage that is shown as the narrow dashed line. The national data show a declining trend since the early 1970s which has caused considerable discussion among macroeconomists. It is argued that this is due to a myriad of factors: the move from heavy industry to service occupations; the increased proportion of salaries based on commissions; the rise of part-time work; the entry of women into the labor force; and a geographic redistribution of jobs to the southern United States where wages and the cost of living are lower. Consequently, Robert Gordon at Northwestern University has calculated a modification to these

data that is based on the labor share of the national income accounts. This is shown as a narrow solid line. This line includes all payments to labor, including employer-paid fringe benefits, and is therefore comparable to the bold solid line for the CTA.

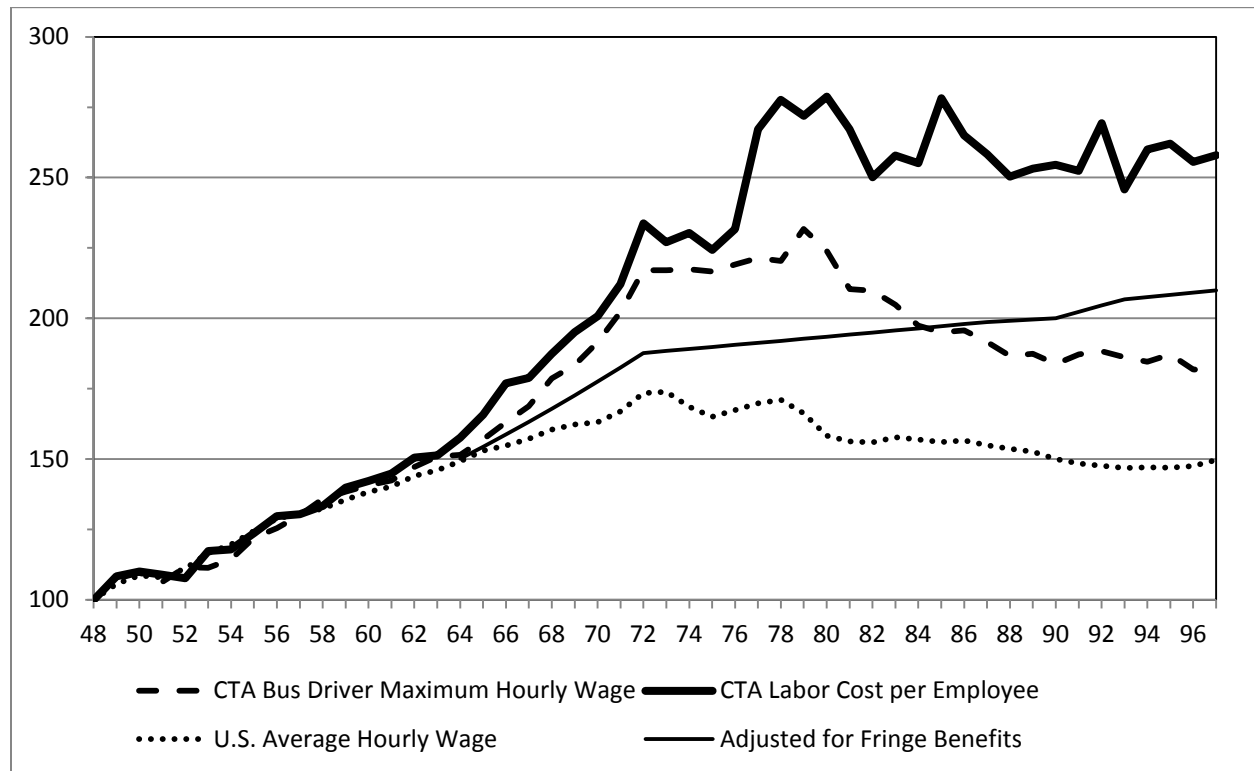


FIGURE 1: Indices of CTA and National Hourly Wages and Cost per Employee in 1997 dollars with 1948=100

One will note that until the early 1960s these series moved in concert with each other. Then throughout the 1960s CTA costs started to diverge from the United States average. This was fueled by the Cost of Living Adjustment (COLA) clauses in the labor agreement that automatically compensated employees for inflation. These adjustments were in addition to regular negotiated raises. While these clauses had been in the labor agreement since the mid-1950s, they became significant with the emergence of rampant Vietnam-era inflation. It must be said, though, that there is evidence that wages had been too low in the early years of the CTA. The 1971 CTA Annual Report remarks that it was the first year since 1950 that the agency could fill its full complement of bus drivers.

Then in the 1970s, the continued increase in labor costs came from an increase in fringe benefits rather than wages. In particular, sickness benefits were increased significantly. The mark up of fringe benefits over wages, which was around twenty percent in 1960 increased to forty-six percent by 1980. Throughout the 1970s, management believed, correctly, that subsidies would increase to fund the expanding wage bill, and hence had no incentive to keep costs in check.

The turning point came with the political reaction to the December 1979 transit workers strike, and the capping of subsidies following the potential insolvency of the Regional Transportation Authority in 1981. Since 1980, the CTA management has managed to keep labor costs in check. Hourly wages have fallen in real terms. Nevertheless, one could still argue that

CTA labor costs per employee are twenty-three percent above those that would apply if the CTA had followed trends in the economy as a whole.

Figure 2 summarizes these developments in a visual form. The solid line is the ratio of the CTA labor cost per employee to national average earnings and is measured on the left-hand axis. This is the ratio of the bold solid line to the narrow solid line in Figure 1. The dashed line in Figure 2, which is measured on the right-hand axis, shows CTA operating subsidies in constant 1997 dollars. It is quite remarkable how the relative earnings of CTA employees increased rapidly after the establishment of subsidies and continued to increase until subsidies were effectively capped in 1980.

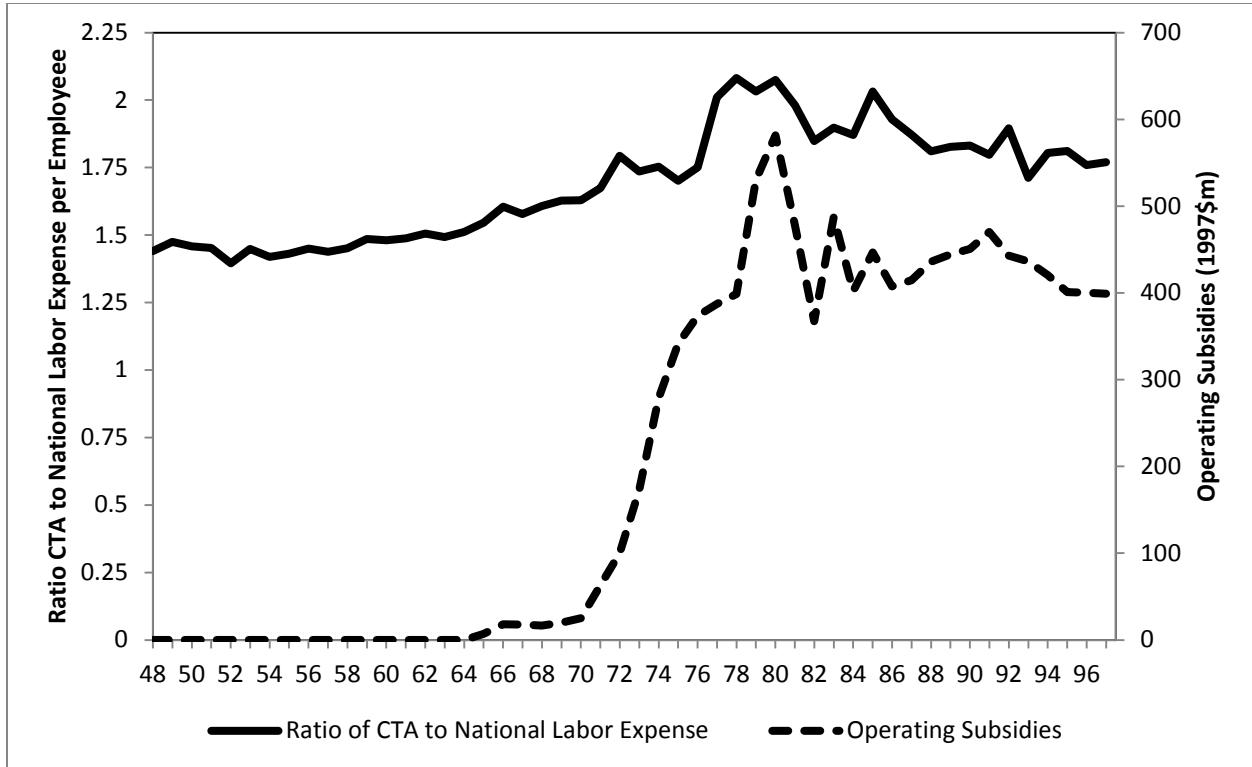


FIGURE 2: Ratio of CTA to National Labor Cost versus Operating Subsidies

Inefficiencies have not only arisen in terms of payments to labor. There are also scheduling rules and employment protection that have resulted in excess employment of labor. Figure 3 shows employment and service output as indices, with the value in 1948 set to one hundred. Prior to 1980, employment is measured as a head count whereas since then it is measured as “full-time equivalent” employees which permits measurement of the introduction of some part-time labor in recent years.

As Figure 3 shows, employment fell in the early years of the CTA as two-person streetcars were replaced by one-person operated motor and trolley buses. In addition, poorly used rail stations were closed, and new cars removed the need to have a conductor in each car. These efficiencies were achieved by 1964. Yet the number of employees remained largely unchanged for the next thirty years, despite a forty percent reduction in bus mileage and a fifteen percent increase in rail car mileage. It is only very recently that further reductions took place as the CTA introduced one-person train operation and automated ticketing.

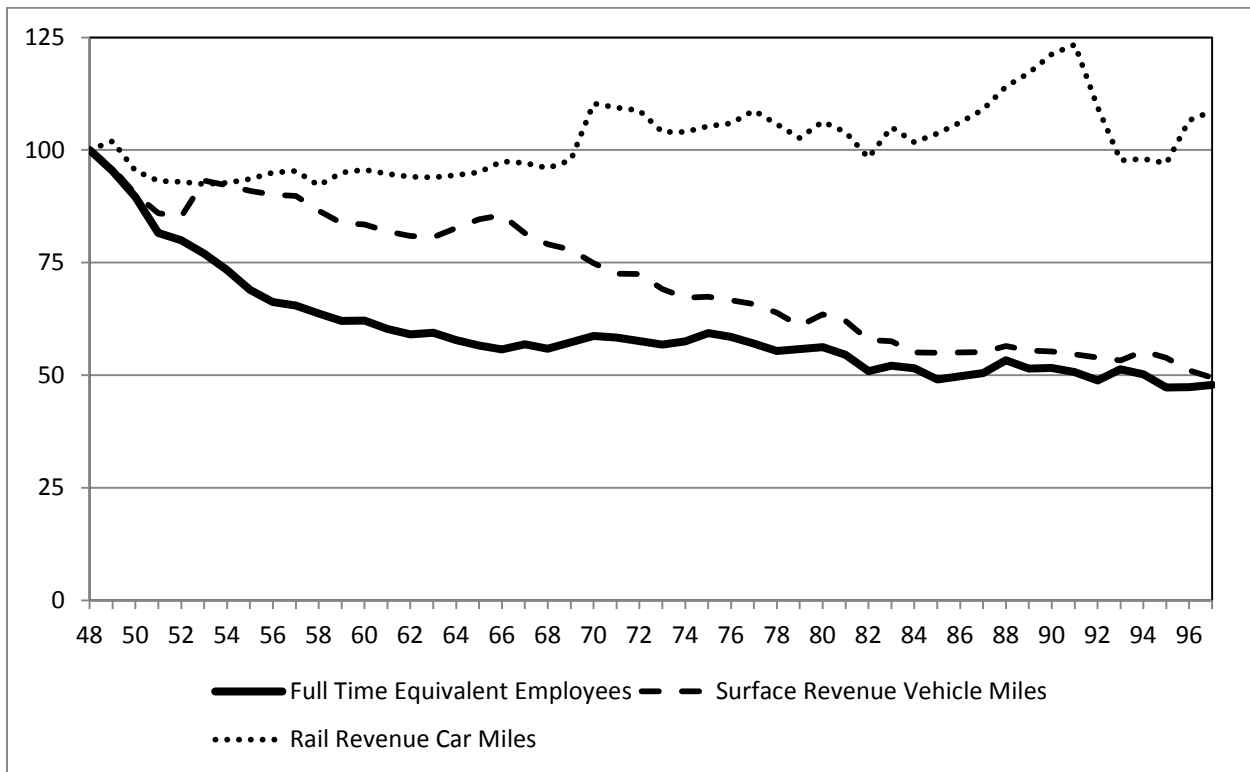


FIGURE 3: Indices of CTA Employment and Service Levels with 1948=100

Experience elsewhere in the world suggests that cost efficiencies from privatization have come both from wage reductions and from increased flexibility in the use of labor. In Britain in the early years of deregulation, the wages of bus drivers declined by fifteen percent in real terms compared with other blue-collar workers, and the number of vehicle-miles per employee increased by a quarter (White, 1990).

One can draw a number of conclusions. First, there is ample evidence of the potential for reductions in operating costs. Second, privatization has reduced costs in other settings. Third, it will take a dramatic change such as privatization to bring cost reduction about. Today's inflated cost conditions date from the late 1960s and 1970s, rather than from the management that has been in place since 1980. As transit workers have enjoyed these economic rents for so long, it will be difficult to take them away.

Undoubtedly transit workers will be made worse off under competitive contracting. While cities such as Stockholm and Copenhagen required successful bidders to hire the existing workforce with no reduction in wages, competitive pressure may slow subsequent wage increases, diminish fringe benefits, and permit more flexible scheduling of duties. Consequently, there will ultimately be a transfer of benefits from employees to transit users or to people to pay sales taxes to support the CTA. While it is hard not to feel sympathy for people doing a difficult urban job, it is also hard to justify why they should earn more than they would elsewhere in the labor market, especially when one considers who is paying for these rents. The rents earned by labor since the 1960s have come at the expense of poorer people who bear the brunt of a regressive sales tax, and transit users, many of whom come from poorer sections of society, who pay higher fares or receive less frequent service than they would otherwise.

Privatization May Help: Innovative Service

For the past five decades, since the modernization of the late 1940s, the CTA has operated a basically similar service using similarly sized vehicles on its surface system. During this time, auto ownership has increased, the city has suffered from migration of population to the suburbs, and the locations of jobs, retail activity and leisure attractions have changed. Serious questions can be raised about the desirability of retaining the grid system of operation and using large vehicles on increasingly infrequent headways in the off-peak in the lower density parts of the city.

A feature of deregulation and privatization in other parts of the world has been the introduction of smaller vehicles operating more frequently. This was certainly a feature of privatization in Britain. Even though, the size of the small vehicles used in Britain has increased over the past ten years, there is still potential for Chicago to learn important lessons. Evidence has shown that the largest benefits have occurred in the off-peak and in low-housing-density markets where previously there was quite infrequent service (every fifteen to thirty minutes). White and Turner (1987) concluded that service-frequency elasticities as low as 0.4 could justify provision of higher frequency service using smaller vehicles.

The effect that privatization will have on innovative service provision and also on the structure of existing routes is debatable. To some extent the radical changes may cause planners to question some long-standing assumptions. In addition, private bidders may have innovative ideas for service provision and be freed of labor constraints that fossilize operating practices and traditional methods of service delivery. A lot will depend on the nature of the contracting process. The public authority will need to “think outside the box” and allow for some feedback in the bidding process for the firms to suggest alternative methods of service provision, while at the same time having enough uniformity in the bidding process so that informed comparisons can be made between the various bids. The fact that individual routes come up for rebidding every three to five years may lead to routine reviews of service delivery. To help encourage comprehensive and innovative proposals, the public authority may have to arrange for groups of neighboring routes to be put out to bid at the same time to allow for the possibility of substantial revisions of services at some point in the future.

Privatization Can Help: Balancing Fares and Service Levels

There is a third potential problem of transit provision that is less obvious than cost inefficiencies and inappropriate service delivery. This is whether the transit authority has the correct “balance” between fares and levels of service. The underlying economics of this issue are somewhat complicated but make intuitive sense. As a prelude to discussion of this topic, one should look at trends in demand, fares and service levels.

Figure 4 shows fares, in constant 1997 dollars. The thicker line shows the base one-ride cash fare, while the narrower line is the average fare paid per passenger when allowance is made for transfers, reduced fare passengers and monthly pass holders. There has been a gradual increase in real fares since 1980, which followed a period in the 1970s when actual fares were held constant despite high inflation. Despite the recent increases, real fares are still lower than when the CTA was trying to avoid bankruptcy in the late 1960s.

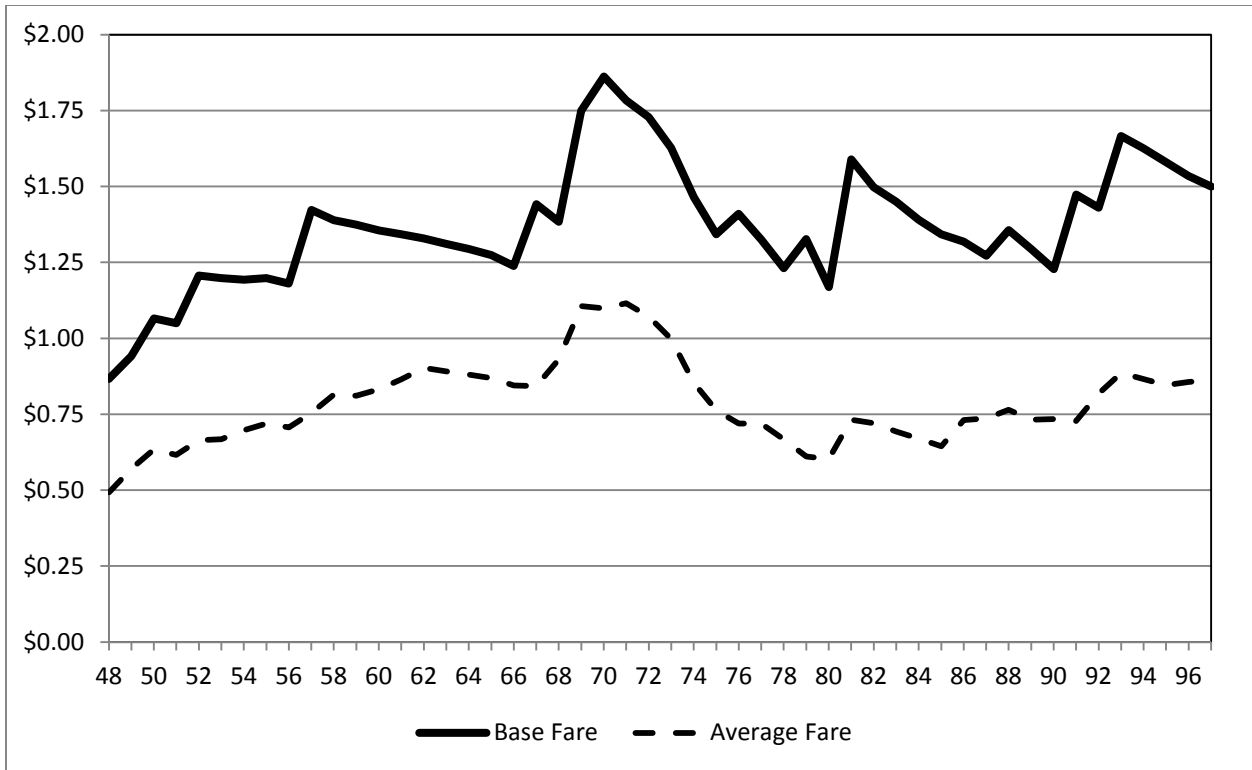


FIGURE 4: Fares in 1997 Dollars

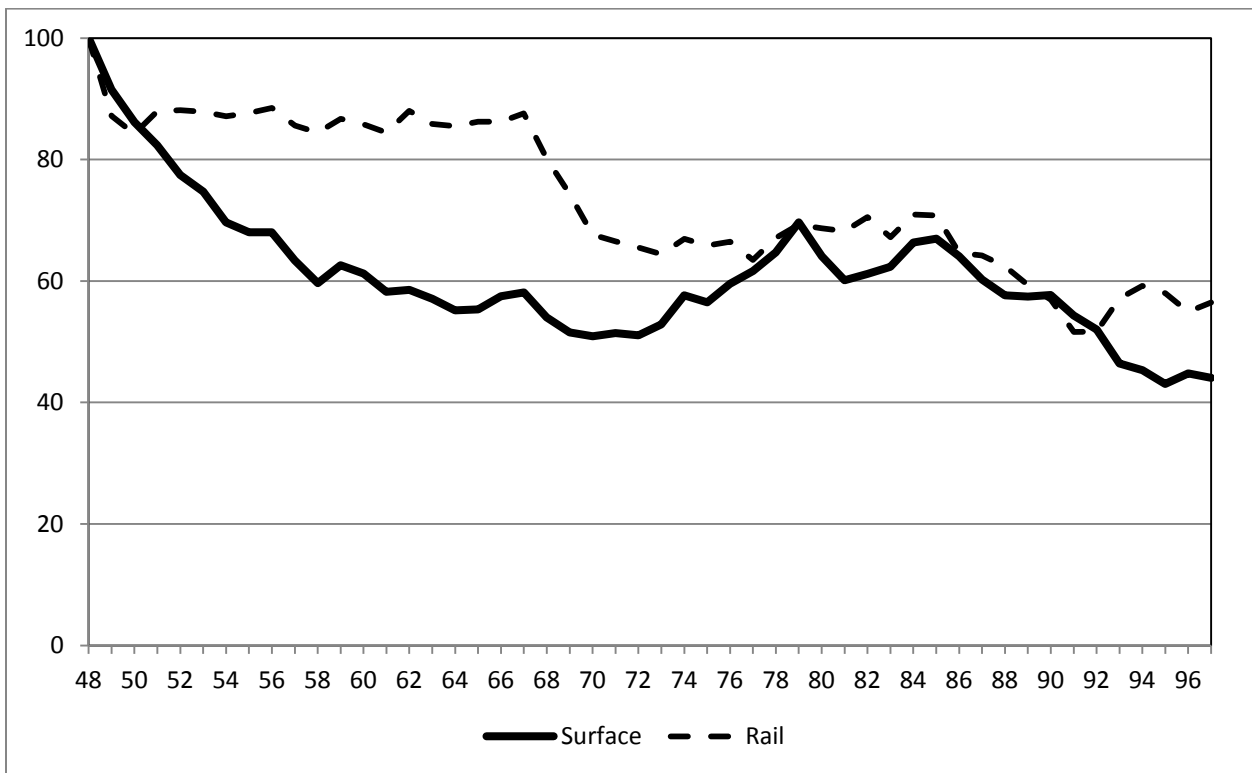


FIGURE 5: Indices of Unlinked Trips to Vehicle Miles by Mode with 1948=100

Figure 5 shows the levels of demand for the bus and rail systems relative to the levels of service provided. The indices shown are the ratio of unlinked passenger trips to vehicle miles (on the bus system) and car miles (on the rail system). Both are shown as an index with the 1948 value set to one hundred. For both rail and bus, the decline in demand has not been matched by a commensurate decrease in the level of service. This is especially noticeable on the bus system since 1990, where despite a ten percent service reduction, there has been a loss of almost a third of the ridership. In contrast, service realignments in the early 1990s have allowed the rail system to stabilize average loads.

Bearing these figures in mind, we now turn to the underlying economic theory. Transportation firms are unusual in that they can choose both their price (fare) and the level of output (vehicle-miles). This contrasts with many manufacturing firms who can only choose one of these variables with the other being determined in the marketplace.

For a given level of subsidy, transit firms can either provide a high level of service at a high price, or a lower level of service at a lower price. The combinations of service level and fares that can be produced for a given level of subsidy are shown as the curved line in Figure 6. These combinations are based on existing CTA cost and demand conditions. But where should the transit authority choose to be along this line? It is reasonable to suggest that the objective of the transit agency is to maximize public benefits for a given level of subsidy. Clearly, riders prefer high levels of service and low fares. Therefore from their point of view, they prefer points that are toward the bottom right-hand corner of the diagram. Hence there will be a point on this curve, marked by the square, where the benefits to riders are maximized given the amount of subsidy available. Economists refer to this point as being where fares and service levels are “balanced.” If they are unbalanced, riders can be made better off by lowering fares and increasing service levels, or vice-versa, while keeping the overall level of subsidy constant.

A recent research project, using CTA data for 1994, investigated how well CTA fares and service levels were balanced (Savage and Schupp, 1997). That project investigated the costs and benefits of using subsidies either to reduce transit fares or to increase levels of service. The model considered benefits to riders in the form of monetary savings (if fares are reduced) and waiting time savings (if frequencies are increased), plus benefits of reduced congestion to road users in peak periods if people are attracted out of their automobiles onto transit. The model was estimated separately for CTA bus and rail operations, and for four time periods: weekday peak (6am-9am, 3pm-6pm), weekday off-peak, Saturdays and Sundays.

The model was rerun for this paper to calculate the benefits per dollar of subsidy used to finance a tenth-of-one-percent change in fares and service levels. These are shown in Table 1. If fares and service levels were balanced, not only between themselves but also across the different time periods, then the benefits per dollar of subsidy should be identical in all cells of Table 1. This is clearly not the case. For both modes and in all time periods, the benefits of subsidizing fares are greater than the benefits of subsidizing increased service levels.

The implication is that social benefits can be increased without the need for additional subsidies simply by reducing service levels and using the money saved to reduce fares. In terms of Figure 6, we are currently on the portion of the curve above and to the right of the point indicated by the square where fares and service levels are balanced. This point is represented by the circle. This finding is consistent with the research of John Dodgson (1987) who looked at bus and rail service in eight Australian cities, and to some extent the research of Stephen Glaister (1987), who looked at service in six major British cities.

TABLE 1: Benefits per Dollar of Subsidy

	Weekdays		Weekends	
	Peak	Off-Peak	Saturday	Sunday
Bus				
Fares Decrease	\$1.42	\$1.90	\$1.90	\$1.92
Service Increase	\$0.24	\$1.23	\$1.38	\$1.27
Rail				
Fares Decrease	\$1.27	\$1.19	\$1.19	\$1.19
Service Increase	\$0.37	\$1.06	\$0.85	\$0.59

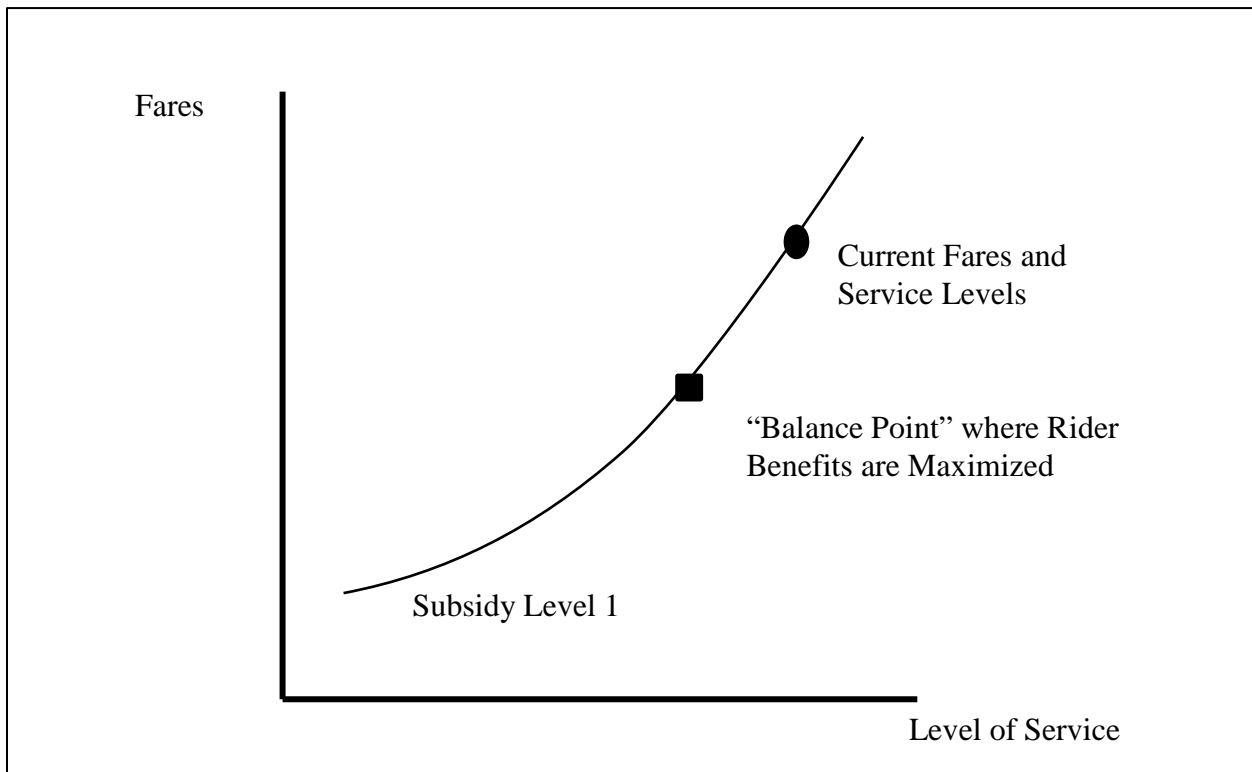


FIGURE 6: Choice of Fares and Level of Service for a Given Level of Subsidy

The reasons for the current imbalance can be discerned from Figures 4 and 5. Since 1990 there has been a considerable decline in the demand for bus service. It is clear that the CTA has tried to maintain bus service levels in the face of falling demand, and has increased fares in real terms to correct any resulting budget deficit. Service cuts provoke very vocal opposition from staff and specific groups of riders. The opposition to fare changes is a lot more diffuse, and hence less politically effective. By ducking service cuts and opting instead for higher fares, the CTA has actually made the citizens of Chicago worse off rather than better off.

Interestingly, cost reductions brought about by privatization can help to bring fares and service levels back into balance. Under competitive contracting, the benefits of using subsidies to increase service levels will be much greater because more service can be obtained per dollar of subsidy. The benefits of using subsidies to change fares, while keeping service levels constant, are unaffected by changes in operating costs.

Table 2 shows the revised benefits per dollar of subsidy if operating costs are reduced by twenty percent, which is a quite conservative estimate. Now fares and service levels are much more in balance, with the exception of peak service and Sunday rail service. Indeed, in some cases the balance of service levels and fares have reversed themselves. For example, on Saturdays on the bus system it may make sense to increase fares so as to fund increased service levels. This is a remarkable by-product of the cost reduction associated with privatization. The reason why we have come into balance without actually changing the mix of fares and service levels is that the line showing possible combinations of fares and service levels in Figure 6 is dependent on operating cost. If costs fall, the amount of service that can be produced for a given level of fares and subsidy will be much greater. Another way of thinking about this is that the revenue generated from a fare increase can purchase more service than would have been possible if costs were higher. This means the line connecting the possible combinations will become much flatter. Consequently, the point on that curve that maximizes social benefits will change. The calculations in Table 2 suggest that this new balance point will be much closer to the current combinations of fares and frequencies.

TABLE 2: Benefits per Dollar of Subsidy with 20% Cost Reduction

	Weekdays		Weekends	
	Peak	Off-Peak	Saturday	Sunday
Bus				
Fares Decrease	\$1.42	\$1.90	\$1.90	\$1.92
Service Increase	\$0.30	\$1.81	\$2.08	\$1.88
Rail				
Fares Decrease	\$1.27	\$1.19	\$1.19	\$1.19
Service Increase	\$0.47	\$1.38	\$1.09	\$0.75

This is illustrated in Figure 7, which builds on Figure 6. If operating costs are reduced, the line showing possible combinations of fares and service levels for subsidy level 1 becomes much flatter and is shown as the lower dashed line. Clearly if operating costs are reduced, then more service can be produced at lower fares with the existing level of subsidy. Put another way, if the current levels of service are maintained and fares do not change, the subsidy requirement will fall. The upper dashed line shows the combinations of fares and service levels that can be produced with this lower level of subsidy. Because this line is much flatter, the current combination is much closer to the new balance point, which is indicated by the square on the upper dashed line.

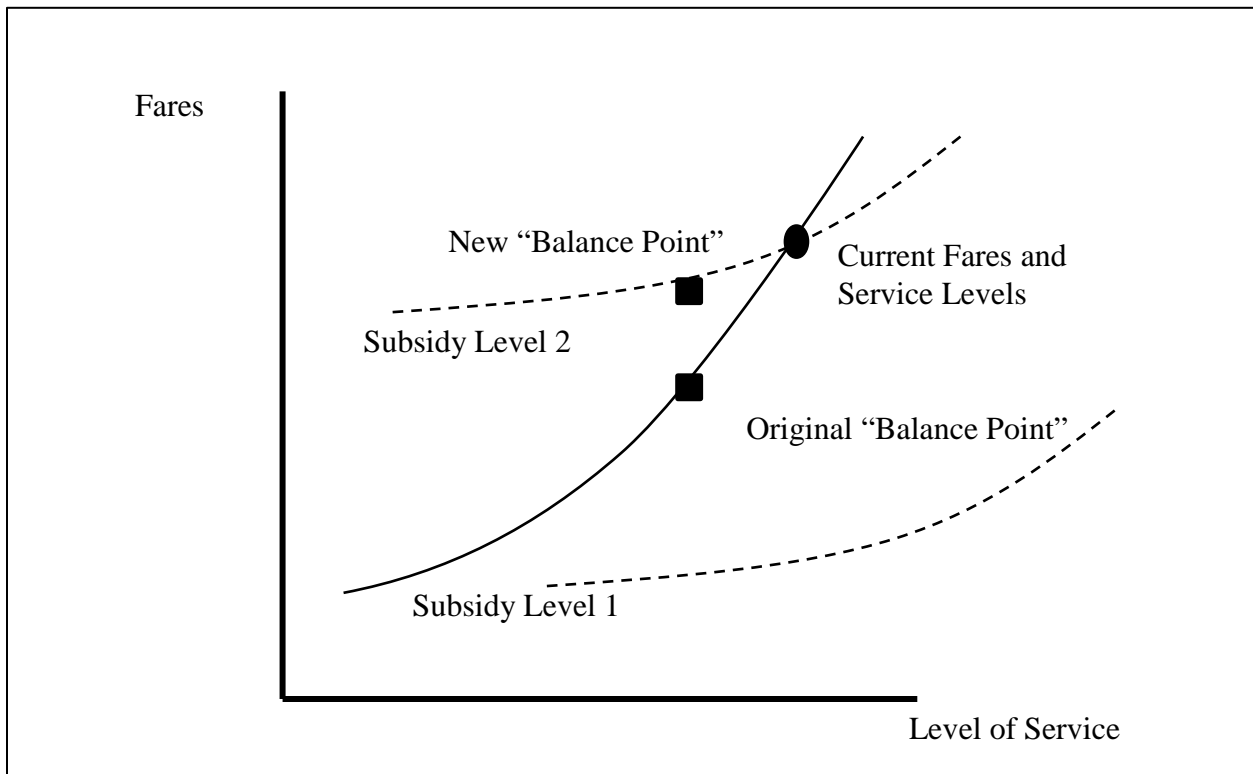


FIGURE 7: Balance of Fares and Service Levels after Cost reduction

Privatization May Help: More Service and Lower Fares

An obvious implication of cost reduction is indicated in Figure 7. If there continues to be similar fares and service levels in Chicago, then smaller subsidies will be required to support public transportation. But what will happen to the public money that would become available if subsidy requirements fall? Obviously some of this reduction will be needed to meet the elimination of all federal operating subsidies and to erase the deficits that have occurred at times in the 1990s when there were lower than anticipated passenger revenues.

Some of the operating cost savings will be needed to fund new buses. If bidders are required to supply their own vehicles, the capital cost of rolling stock would be borne by private bus companies and would be reflected in their bids, rather than appearing as a “free gift” from the federal or state governments in the CTA’s capital budget. Despite the capital funding in the 1999 Illinois FIRST state infrastructure program, there are still partially unfunded rail system capital needs, such as the rebuilding of the Ravenswood and Douglas lines, that could be funded from any operating cost reductions.

It is clearly a political decision how the reductions in operating support are used: to reduce the sales tax burden, to fund the capital program, to allow lower fares and greater levels of service, or some combination of the three. However, the model can help inform the debate. Table 2 indicates the value of social benefits than can be achieved with each dollar of subsidy after operating costs are reduced. Except for subsidies to service levels in the peaks, these values are greater than a dollar, indicating potential net social benefit.

However, the true comparison is with \$1.26, which is the cost of the dollar of subsidy plus the excess burden of raising that dollar by a sales tax (Jorgenson and Yun, 1991). Raising tax rates will increase the cost of goods and services and produce a deadweight loss because some consumers will no longer purchase the taxed goods. This “shadow value (or excess burden) of public funds” should not be confused with the costs of solely administering raising tax dollars.

Therefore, one should only consider spending some of the subsidy funds saved when the benefit amount in Table 2 is larger than \$1.26. One could therefore justify lower bus fares, additional bus service outside peak periods, and enhanced weekday off-peak rail service.

Privatization May Not Help: The Structure of Fares and Services

Table 2 shows the poor value for money from supporting enhanced service levels during weekday peak periods. Even with unit cost reduction from competitive contracting, there are strong indications that peak services levels should be reduced. To some extent this is a feature of the very peaked provision of service with peak-to-base ratios of 1.7 to one on the bus system and 2.7 to one on the rail system. Some people may argue that it is impossible to reduce peak service without leaving people behind at stops. It is true that the CTA does operate at “crush loads” for short periods at certain parts of its system, and people will not be able to board the first bus or train that arrives if service is reduced. However, that situation does not occur on all parts of the CTA system. Even if one assumes that there are no riders traveling in the reverse direction to the peak flow, which is clearly not true, there is currently an average of twenty-eight people on each bus, and seventy people per train car during the peak periods.

It is somewhat debatable whether privatization will induce planners to deal with the excess supply in the peak period. Recent attempts by the CTA to stem its budget deficit have focused on trimming off-peak service. Yet, as is clear from Table 2, the off-peak periods generate far higher net social benefits per marginal unit of service primarily because this service is relatively inexpensive to provide. Recent political decisions for reducing service have focused on the wrong area. Judging from Table 2, the only off-peak service that should be investigated for possible reduction is Sunday rail service.

Another striking result from Table 2 is that while rail fares are “acceptable” in that the marginal benefit of using subsidies to reduce fares is close to the excess burden of raising the subsidy, bus fares could be reduced, especially during off-peak and weekend periods. The reason that bus fares have a high return to subsidy is because of the current CTA fare policy. The CTA charges a flat fare that is the same on both modes, despite the fact that bus journeys are more sensitive to price and have considerably shorter average journey lengths (just over two miles, compared with six miles on the rail system). In addition, people wishing to transfer between buses have to purchase a transfer, while transfer between rapid transit lines is free. Clearly, there is considerable evidence to suggest that the CTA should charge differential fares between bus and rail, especially in the off peak. Again, this is a policy option that would lead to real benefits for riders, yet may not be directly influenced by privatization.

In Conclusion

There is ample evidence that considerable cost inefficiencies were introduced into CTA operations in the late 1960s and 1970s. Competitive contracting has shown itself to be an effective method to reduce inefficiencies elsewhere in the world. As a consequence there will be a more socially beneficial balance between fares and service levels. Furthermore, lower

operating costs will reduce the current need for operating subsidies, thus allowing reduced sales tax levies and/or improved transit service. This paper has indicated some areas where there would be very high social benefits from reinvesting some of the subsidy monies that are saved.

However, privatization is not a complete panacea for all of transit's ills. There are open questions as to the appropriate methods of service provision in lower density parts of the city, whether all of the additional capacity provided in the peak is justified, and whether there should be differential fares between the bus and rail system and between different times of day. These are also pressing policy issues for transit, and ones that are not directly tied to the privatization debate.

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