

DEREGULATION AND PRIVATIZATION OF BRITAIN'S LOCAL BUS INDUSTRY

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Published in the *Journal of Regulatory Economics*, Volume 5(2),
pages 143-158, June 1993

I would like to thank John Panzar and an anonymous referee to many useful comments and suggestion that have improved the organization and presentation of this paper. I cannot claim that either would necessarily subscribe to the opinions herein.

ABSTRACT

In 1986 the British government deregulated the majority of the local bus industry, cut the amount of a subsidy, and privatized many public bus companies. Unit costs have declined significantly, cross-subsidies have been reduced, and there has been innovation in operating practices. However, mergers have increased concentration, and demand has declined due to the turmoil of service changes and the loss of network integration. In London an alternative policy has been adopted whereby there is Demsetz competition for short-term monopoly rights. The paper argues that this regime will lead to greater benefits in the long run.

1. BACKGROUND

By the 1970s Britain's local bus services were almost exclusively provided by government owned firms who enjoyed monopoly protection by means of route licenses issued by quasi-governmental officials called Traffic Commissioners. Service in the fifty major metropolitan areas and main towns was provided by companies owned by local governments. The national government owned two large holding companies that provided, through some seventy subsidiary companies, service in the small towns and rural areas. Even where two or more of these companies provided service in the same area, there was rarely competition. Firms coordinated their schedules and fares. New entry to the industry was practically impossible.

Declining patronage since the 1950s had damaged financial performance. By the late 1970s external subsidies represented some 15-20% of operating costs outside of the major urban areas. In the major conurbations socialist controlled councils gave large subsidies so that fares could be held at low levels. Subsidies in these areas were representing about a third of costs, and in the case of London almost 50% (Department of Transport, annual).

The Conservative government elected in 1979 adopted a three part approach to the industry. They wanted to (a) reduce subsidies, (b) permit competition, and (c) privatize companies. The main piece of legislation to achieve these goals was the Transport Act of 1985. It had the following provisions:

Deregulation: From October 1986 the route licensing system was abolished. On routes and times at which a profit is possible, firms can now freely enter and leave the market and charge whatever fares they wish.

Subsidies: Subsidies to promote artificially low fares were outlawed. Local governments can now only provide subsidies for services which would be impossible to provide commercially. Examples are services in the evenings, on Sundays, and in rural areas. Firms must bid competitively for the right to operate these subsidized services.

Ownership: The national government implemented a program to privatize the subsidiaries of the two holding companies that it owned. All were disposed of in the period 1986-1991. In contrast very few of the municipal governments have decided to sell the companies that they own. However, such companies have to be managed in a commercial manner and independent of the local government that is the sole shareholder. Following the re-election of the Conservative Party in 1992, it is likely that the central government will force the sale of these companies.

London: In the early 1980s the national government abolished the socialist metropolitan council in London and nationalized London Transport (LT), the transport company that it owned. London was exempt from the 1986 deregulation. However, an interesting experiment has been conducted. The transport company was split into a central planning company and subsidiary operating companies for the buses and subway. The planning company has implemented a program by which both profitable and unprofitable routes are placed out to contract. Both subsidiaries of LT and others can bid for these three year contracts. With the re-election of the

Conservative Party it is expected that this regime will end, the subsidiaries of LT will be privatized and free competition will be introduced.

This paper will address three questions: Is deregulation workable in this industry? Has society benefitted from deregulation? And are there alternative regimes that promise higher benefits?

2. IS DEREGULATION WORKABLE IN THE BUS INDUSTRY?

2.1 In Theory

There appears to be two strong arguments in favor of expecting a competitive market. The first is that all empirical investigations have been unable to identify economies of scale with respect to firm size (Lee and Steedman, 1970; Button and O'Donnell, 1985; Windle, 1988, 119-140; Hensher, 1988, 141-170). Coupled with this is an apparent lack of sunk costs, which should engender a highly contestable market. Much of the competition that has occurred is at the boundaries between existing companies, and these firms already have the necessary garaging and organization in place. Similarly many of the small entrants were also established firms with an operating base because they were engaged in other coaching work such as private hire and excursions and tours. Increasingly many buses are maintained at facilities that could equally be used for the maintenance of road freight vehicles. There is a flourishing second hand bus market with plenty of vehicles available from the downsizing of the fleets of certain established operators following efficiency measures adopted after deregulation.

There are, however, three possible qualifications to the statements in the preceding paragraph which may inhibit competition: economies of density at the route level, the "Mohring" effect, and network integration. The first of these has been recognized for many years on low frequency services, where the average cost curve with respect to passengers carried resembles a "saw" shape. This is illustrated in figure 1. Let us assume that one bus per hour is run. Given that much of the costs of operation become fixed as soon as the bus is in service, and the marginal operations costs of an additional passenger on that bus are approximately zero, then as load factor on the bus increases the average cost falls. However, as soon as the number of passengers warrants a second bus per hour, the average cost function shifts upwards and then starts to decline again. This may explain why there is unlikely to be competition on infrequent services such as on Sunday and in the evenings. Traditionally it has been assumed that such economies are effectively expended above a frequency of two buses per hour. However, Windle (1988, 119-140), using United States data, found that these economies also exist on higher frequency services. Although he does not provide any explanation, such economies of density may result from the cost of roadside inspectors, provision of shelters, and the ability to effectively schedule crew and accommodate relief points for meal breaks. Thus it may not be surprising if individual routes display some elements of natural monopoly. However, even if one-operator-to-one-route results, there is no evidence to suggest that large territorial companies should have cost advantages.

The economies of density are complemented by economies to passengers that result when increased service reduces average waiting times; the so called "Mohring" (1972) effect. *A priori* such economies need not lead to an uncompetitive situation. If two companies compete on a route, and passengers choose freely between them on the basis of boarding whichever vehicle arrives first then the Mohring effect economies are available equally to both competitors. However, as soon as some brand loyalty is introduced, which is typically done by selling weekly or monthly "pass" tickets, then the firm offering a higher proportion of the departures in a given market is clearly able to internalize some of the Mohring effect as a competitive advantage.

The analysis has so far assumed that passengers make purchases of services on individual routes, and thus each route can be considered as a separate market. Some observers of the industry, such as Nash (1988, 97-118) dispute this arguing that many people desire a network of services allowing complete mobility throughout an urban area. If this is the case then a dominant firm selling a network-wide pass ticket restricted to its own services is clearly at a competitive advantage. The validity of this argument is difficult to judge. Although transportation planners recognize that complex "trip chains" are made by urban travelers, to my knowledge there is no definitive study which establishes that bus travel is largely purchased on a network basis. Indeed, to the extent that much travel is by commuters it may be fair to assume that many transit riders patronize only one or two routes.

2.2 In Practice

In practice, competition has not been widespread. As expected the competition that has emerged has been on the most frequently serviced routes. Competition in the evenings, on Sundays and on rural routes has been very rare. In most areas of the country there has not been sustained competition. Incumbent operators have acted swiftly to stamp out challenges (see for example the case of Suffolk reported in *Bus Business*, 3 November 1990). Tactics by incumbent operators include selective fare reductions and, more importantly, flooding the market with additional and duplicative departures. This latter tactic known as "swamping" has been used very effectively to force short run losses on both parties, and force the entrant out of the market due to cash flow problems. By reacting very vigorously the existing firms send a strong message to potential entrants.

The competition that has occurred has been concentrated in the large cities. Glasgow, Manchester, Liverpool and Sheffield have witnessed repeated attacks on the incumbent operators by neighboring companies and new small companies. Some of these latter companies were founded by staff made redundant by the established operators at the time of deregulation. Nevertheless, peace now prevails in Glasgow, and in Sheffield the established operator adopted a policy of purchasing its competitors. In an effort to internalize the Mohring and network economies the existing city-wide multi-operator pass ticketing schemes have been gradually eroded in Birmingham, Leeds, Liverpool and Manchester as the predominant operator has introduced ticketing restricted to its own operations. This tactic has been especially successful in Birmingham where the existing network operator has been able to combine a widely used pass ticket and an existing market share of more than 80% to deter any effective competition.

Minor skirmishes have occurred elsewhere in the country. Often these can be traced to long-standing boundary disputes and personal grudges. There have been a few notable successes where a new operation has captured and maintained significant market share, such as the entry of Southern Vectis into Southampton, and Transit Holdings into Oxford. And some notable failures such as the Badgerline move into Wessex, the "Plymouth bus war," and the entry by international conglomerate United Transport International into south Manchester. In the South Wales valleys, an area rich with private operators, the existing network operator was attacked on all fronts and forced into financial ruin. Some poorly run, and high cost, municipal operators have faced similar problems, and in a couple of cases have ceased operation.

There are, however, some increasing concerns about future competitiveness. Outside of Manchester and Liverpool, concentration is probably increasing. The mergers have been of two types. The first is the acquisition of firms in direct competition with the purchaser. There has been a wave of acquisitions of small independent firms by the large publicly owned, or formerly publicly owned, companies. Some of these acquisitions such as those in Nottingham, west Hertfordshire, Harrogate, Sheffield and Teeside were of firms who were in active competition with their suitors.

A second type of merger has been between formerly government-owned firms that were territorial neighbors but not necessarily active competitors. This has happened despite government efforts to prevent this in the disposal program. Examples being the dominance of Badgerline Holdings in the southwest, Yorkshire Rider in west Yorkshire, Stagecoach Holdings on the south coast and in eastern Scotland, and Western Travel in the southwest midlands. Indeed there has been a general agglomeration of firms who were privatized separately by the government. Of the 65 local operating subsidiaries in England, Scotland and Wales formerly owned by the national government only 20 are still separately owned and not part of a grouping of two or more companies. Twenty are in the hands of three large conglomerate companies.

Britain does have rules and laws dealing with anti-competitive mergers and practices. However reference to the Monopolies and Mergers Commission, the governmental body charged with investigating any cases, can only be made if the takeover target has assets over a certain size, or else the combined companies would have a combined market share over "a substantial part of the United Kingdom" of 25%. Few bus companies would qualify under the first of these conditions, and based on recent court rulings the latter condition is unlikely to be binding. The law is clearly deficient in its dealings with an industry that is clearly local in nature. Some of the recent mergers have given a single firm virtually a monopoly over large cities and parts of the country, yet escape legal attention. The government has also been criticized for being very tardy in investigating cases where predatory actions have been taken against small competitors.

2.3 In Conclusion

One should probably conclude that this is an industry in which competition is workable. Large operators do not exhibit operating cost scale economies to protect themselves against smaller entrants. In practice, the most notoriously badly-run operators have been mercilessly, and repeatedly, attacked in the past five years. One could even argue that those firms not subject to actual competition recognize that a competitive strike could happen at any time. The

circumstantial evidence in support of this statement is that costs have declined substantially for all categories of operators, including those who have not faced actual competition, and that there is no evidence that prices are being set substantially above costs. Excess profits are not being earned. Financial analysis of the industry suggests that few firms are making enough return to provide for capital replacement, and more than half would be better advised to sell their assets and invest their money in a bank deposit (Transport Advisory Service, 1991). Prices, if anything, are probably currently "too low."

However, there are two major areas of concern that demand a policy response to ensure fair competition. First, large network operators can protect themselves by pass ticketing systems that cement brand loyalty and allow the operator to share some of the Mohring economies of scale to passengers and demand side network economies. Second the law is clearly deficient in preventing neighboring or competing firms from merging.

3. HAS SOCIETY BENEFITTED FROM DEREGULATION?

In summary the following events have occurred. Costs have fallen dramatically, as have external subsidies. The net result is that fares are little changed or have increased. There has been some withdrawal of service in the evenings and weekends, but an expansion of frequency where small minibuses have replaced conventional services in medium sized towns and where additional competitive capacity has been provided. However, given changes in fares and quality of service, demand has decreased considerably more than would be expected.

In this section we will review the details that underlie the summary facts just presented. Then an evaluation will be made of the combined effect on economic welfare drawing on the work of White (1990).

3.1 Costs

National collective bargaining was discontinued at deregulation, and wages and conditions can therefore now reflect local labor markets. White (1990) calculates that the wages of bus drivers have declined by 15% relative to other manual workers in the period 1986 to 1989. With regard to productivity, outside of London, the number of vehicle kilometers per member of staff increased by 26% between 1985/6 and 1988/9. The corresponding increase in vehicle kilometers per vehicle was 4% (Department of Transport, 1990). As a result, White and Turner (1991) and other authors report reductions in operating costs per vehicle kilometer of the order of 20%. The magnitude of this reduction is somewhat misleading given that, as discussed later, there has been a substitution of smaller vehicles for larger vehicles. As much of the cost reduction has been at the expense of labor, the main effect has been a reduction of labor "rents" and a transfer of that welfare to passengers and taxpayers.

3.2 External Subsidies

Some types of subsidies continued unchanged such as the exemption of public transport from taxes on fuel, and the provision of free or reduced fares for school children and the elderly.

The reduction has been in monies paid to provide artificially low fares, which are now illegal. The extent of such subsidies pre-deregulation depended on the policy of specific local authorities. The most extreme effects of the outlawing of general subsidies were in Sheffield and Liverpool where fares had been held at very low levels. Overall, subsidies per vehicle kilometer have fallen by a fifth in the major cities, excluding London, and by a tenth in other areas (Beesley, 1991).

3.3 Fares

When the cost efficiencies were balanced with subsidy reduction, the result was that fares rose. The rise has been most noticeable in the major metropolitan areas. In extreme cases the outlawing of artificially low fares led to increases of 200% in Sheffield and 100% in Liverpool. The average real fare increase for the major metropolitan areas was 25% over the period 1985/6 to 1988/9. In other areas of the country, where general subsidies were much less important in the first place, the real increase has been on the order of 2% (Department of Transport, 1990). In addition, as already discussed, convenient multi-operator city-wide pass ticketing schemes have been eroded over the past five years.

3.4 Level of Service - Competitive Mileage

In competitive markets there has often been a large increase in vehicle kilometers, not only by the vehicles of the entrant, but also by increased duplication or "swamping" by incumbents. Savage (1984a) raised the theoretical fear that given inelastic frequency elasticities in the industry and the propensity of firms to run their vehicle immediately in front of that of their rivals ("headrunning") that average load factors will fall and economic welfare will decrease. There are no figures on the amount of competitive kilometerage but there are documented occasions where competition has led to severe congestion in the centers of Glasgow, Sheffield, Stockton-on-Tees and Poole.

3.5 Level of Service - Innovation in Minibuses

Prior to the early 1980s service had been provided almost entirely by large, heavy, custom-designed, single- and double-deck vehicles. In the early 1980s the nationally-owned company conducted an experiment in the city of Exeter, Devon whereby infrequent service using large vehicles was replaced by a network of very frequent services using 16-seat minibuses. These vehicles were based on the chassis of commercially purchased light freight vans with comparatively rudimentary bodywork. Management obviously considered the experiment so successful that this style of operation was widely adopted in the following years. Proponents of deregulation predicted widespread adoption based on successful private operation of such vehicles in much of the developing world.

The main advantages are decreased capital, running and maintenance costs. The commonality of chassis with commercial freight vehicles meant that the vehicles are relatively inexpensive and could be maintained by commercial automobile garages and mechanics. However, the reduced seating capacity compared with a large vehicle mean that per-passenger costs are higher. Typically, three minibuses have been required to replace each big bus.

Management hoped to benefit from the conversion to minibuses by generating ridership by virtue of the higher frequencies. Revenues thus generated would outweigh the increased costs. White and Turner (1987) made some calculations and found that a frequency elasticity of about 0.4 was required to "balance" the cost disadvantages. Such an elasticity is not uncommon.

In addition, the minibus was seen to have other advantages. Operators wished to reduce the salaries and terms of employment of their drivers. The introduction of a new grade of "minibus driver" allowed them to recruit staff on a lower hourly rate and with more flexibility of scheduling duties. (Examples of the pay and conditions concessions are illustrated in a report in *Bus Business*, 29 June 1988.) The same occurred in the engineering field where operators could recruit mechanics from commercial garages rather than requiring specialized bus mechanics. It should be noted that the ability of operators to reduce wages was assisted by high unemployment outside of the south-east in the mid-1980s. Indeed, minibus schemes have been much more limited in areas of the country with lower unemployment.

We have already commented that a favored tactic to respond to, or deter, competition has been to swamp a route with a high level of service. The high-frequency minibus style of operation is effective for this purpose. A third advantage is that many companies wished to jettison their rather staid, down-market image by deploying brightly painted small vehicles, with new brand-names, and staff selected and instructed on the basis of "customer service." The vehicles themselves have proved attractive having soft interior trim, and being less prone to crime and vandalism. However, the lack of space and higher floor levels pose problems to the physically less able and those people with shopping bags and small children.

The minibuses probably had their greatest success in the small- to medium-sized towns where a previous half-hourly off-peak big bus service has been replaced by a 10-minute or better frequency by minibuses. However, contrary to the predictions of their proponents, minibuses have not made major inroads into major metropolitan service. On routes already served with a high frequency by big buses and high load factors it is probably uneconomic to use small vehicles. Where minibuses are deployed they have become less "mini" over time. Most deliveries now are in the range of 25-40 seats. A number of manufacturers have entered the market to provide these "midibuses" the largest of which are on a dedicated chassis, a departure from the whole philosophy of the minibus.

3.6 Level of Service - Loss of Cross-Subsidy

Under the regulatory regime, a protected monopoly had been granted in return for an undertaking to provide loss-making services by means of cross-subsidy. Studies in the early 1980s had found that cross-subsidy was extensive (Institute for Transport Studies, 1984). Indeed, in some regions of the country the level of cross-subsidy exceeded the amount of external subsidy. It was feared that as competition removed the ability to raise cross-subsidy funds, it would no longer be possible to provide loss-making services in the early morning, evenings, on Sundays, and in rural areas. Deregulation was occurring at a time when local authorities were attempting to reduce expenditure levels, so it was unlikely that additional external funds would be available to make up for the reduced cross-subsidy.

Intermediate microeconomics can easily demonstrate that such a reduction is desirable as there are welfare losses caused by cross-subsidizing between markets. However, such a simple analysis is not adequate for two reasons. First, some loss-making services were believed to be socially worthwhile. In figure 1 we show the demand and cost conditions for a low frequency service. Demand curve 1 always lies below average cost, therefore commercial operation is infeasible. The first-best price is P with Q passengers. A loss equivalent to areas 2 and 3 is incurred. However, consumers have a surplus equivalent to areas 1 and 2. When $1 > 3$, as illustrated here, the service is worthwhile to provide. In contrast if demand is represented by the dashed demand curve 2 then service is not socially desirable. Second, while it is true that raising cross-subsidy funds from inherently profitable services involves incurring a dead-weight loss, so does raising tax revenues to provide external subsidy. It is an empirical issue, on a case-by-case basis, as to which source has a lower dead-weight loss, especially when one considers that bus transport is usually regarded as highly price inelastic. Savage (1985, 26-49) provides an empirical example where cross-subsidy is more economically efficient than external subsidy.

While one can argue about the allocative welfare effects of cross-subsidy versus external subsidy, the distributive effects are quite clear. Cross-subsidy resulted in some perverse income redistributions. From midday women shoppers to late-night drinkers, and from users of well-patronized services through poorer neighborhoods to riders on lightly used services in middle-class suburbs.

Cross-subsidy also removed the incentive to explicitly identify the financial performance of individual services. Even the external subsidy was provided as a lump sum and not targeted to individual services. Prior to deregulation most operators could not tell you which services were the loss-making ones, let alone whether such services were worthwhile. Ironically, deregulation has led to greater political control over loss-making services. Local authorities now have to target their funds and can develop their own criteria to rank the various services that they could support on the basis of need, and specify the level of service provided. A consequence of this is that local authorities had to expand their transport planning staffs to administer their new responsibilities. This is one of the hidden costs of deregulation.

Discussion about the theoretical desirability of cross-subsidy does not negate the real practical issue faced at the time of deregulation: the fear that substantial amounts of service would be withdrawn. The mechanics of deregulation were that a few months prior to deregulation day companies had to announce which services, and at what times, they wished to retain on a commercial basis. The local authorities could then undertake a tendering process to obtain additional service. In fact the vision of armageddon held by many commentators did not occur. Between 70% and 80% of kilometerage was registered as commercial (Balcombe et al., 1987). The combination of costs that fell quickly and substantially, real rises in fares, and strategic decisions by firms to operate some loss-making services to prevent other companies getting a toe-hold in their territory meant that much of the network could be provided commercially. Declining unit costs meant that subsidy monies would stretch further in purchasing services that could not be provided commercially.

This is not to say that service loss has not occurred. Three percent of pre-deregulation kilometerage was not provided commercially or by means of contracts. Figures from Newcastle

suggest that the reduction was concentrated in the evenings and Sundays (a 10% reduction in kilometerage) and in the early morning (a 25% reduction) (Hopkin et al., 1987). Rural service saw substantial reduction, by up to 25%, in areas where local authorities were unwilling to increase subsidy funding. To some extent deregulation has only hastened a long-term trend, and perhaps many of these services were not justified on the basis of figure 1.

A digression will be productive to describe the form of tendering for loss-making service. In general they have been of the contract rather than franchise type in that the local authority usually specifies the amount and type of service to be provided. The "minimum subsidy" contract has proved to be the most popular. Operators bid for the contracts on the basis of the amount of subsidy required. Operators have an incentive to further reduce unit costs as any savings will accrue directly to them. However, the operator also has to bear the commercial risks of higher costs or reduced patronage. The alternative form of contract where operators bid on the basis of cost, and turn over all revenues to the local authority has proved to be less popular. In both cases, local authorities employ staff to check up on the operation of tendered services. Some have adopted penalty point systems to ensure good and reliable operation. This has been a considerable task for local authorities.

In contrast to the lack of competition on commercial routes, there appears to be more active contesting of tenders. Many small, private firms seem to prefer the relative financial security of a contracted service to engaging in commercial competition with a large territorial company. Tyson (1987) in a review of tendering in the major cities just after deregulation reports that there were an average of 1.3 - 1.7 bids per route in most areas, with the number rising to 2.5 in hotly contested Manchester and Glasgow. Overall 50% of routes had only one bid, although such contracts probably represented small amounts of kilometerage (such as bidding for an evening service by an operator who already provided that service commercially during the day). The government reports a country-wide average of 2-3 bids per route (Balcombe et al., 1987).

3.7 Demand

In assessing the effect on demand, one has to consider the amount of service offered as well as the fares charged. Table 1 reports the changes in fares and frequencies. Drawing on White and Turner (1991) I have therefore tried to estimate the effects of these changes on demand. Following White and Turner I have assumed a multiplicative demand function incorporating a fare elasticity of -0.3 and a service level elasticity of 0.4 plus an annual compound decline in usage of 1.5% per year. Each of these parameters is widely accepted in the industry and by the academics who study it, and there is an extensive literature to support these values. The predicted effects are then compared with observed level of demand. With the exception of London, which has not been deregulated, demand has dropped considerably in excess of that predicted by long term trends and changes in fares and service levels.

Potential explanations are that deregulation caused considerable upheaval in the route network. Routes changed frequently, operators entered and left specific markets, and little information was posted at stops (see for example a report of the National Consumers' Council entitled "Have the buses caught up?" reported in *Bus Business*, 3 November 1990). It is possible

that the reductions in service in the evenings and weekends may have contributed to a loss of patronage on commercial services as potential passengers switched to the automobile. Proponents of the argument that there are demand side network integration effects would link the fragmentation of the network and the erosion of multi-operator network-wide pass tickets to the decline in demand in excess of that predicted using traditional demand parameters.

The demand reduction, which has not been accompanied by a reduction in the amount of service, has ameliorated the cost reductions reported above. Table 2 indicates the consequent effect has been a reduction of 5-10% in the cost per passenger journey. There are two important exceptions. The first is that the decline in load factor has completely outweighed reductions in costs per vehicle kilometer for municipal operators in medium sized towns. The second is London where load factors have increased and thus cost reductions per vehicle kilometer have been enhanced.

3.8 Other Issues

Safety: Prior to deregulation the current author (Savage, 1984b) conducted an analysis of the number of defects found by government inspectors on vehicles of different sized fleets. Small firms were found to have considerably worse safety records. As deregulation has permitted the entry of small firms to local bus operation, one would expect safety to have deteriorated. However a perusal of the popular press does not provide any evidence of any outcry over poor vehicles, even though average vehicle age of "big" buses has worsened. The only measurable negative effect might be from the deployment of ex-London Transport open rear platform "Routemaster" buses for two-person operation in a number of provincial towns as a competitive device. These vehicles have a very high rate of boarding and alighting accidents. However, the initial attraction of this type of operation has waned and their operation outside London is now rare.

Optimal fare-frequency combinations: Bus companies can choose both their fare level and the quality of service offered (i.e., frequency). Therefore for any given financial constraint, such as zero profits, there will be a number of possible fare / frequency combinations that satisfy the constraint (Nash, 1978). Evidence from Britain (Glaister, 1987, 27-39) and Australia (Dodgson, 1987, 52-62) indicates that companies tend to operate with excessive frequencies and higher fares than would be justified by social welfare maximization. This disparity being explained by the tendency of companies, in the face of union pressure, to maximize the amount of service provided in a globally declining market. While deregulation may address issues such as cost and cross-subsidy, it is debatable whether it is effective in removing this particular inefficiency. To the extent that competition occurs in price, one would imagine that the pressure would be in the right direction. However we have already seen that a major weapon in competitive fights is to "swamp" the market with frequency, thus moving in the wrong direction.

Inter-modal effects: Recently there have been a plethora of proposals to re-introduce light rail transit to British cities. Proponents of the free market should be very concerned about the introduction of such natural monopolies on the "best" parts of the deregulated bus network. Skeptics may be forgiven for believing that the socialist politicians and planners excluded from the bus industry by deregulation are now back with a vengeance. Of more concern is a lesson of

history. Among the many reasons for the introduction of bus regulation in 1930 was the desire to protect the tramways from the motor bus.

The removal of general subsidy, especially to the commercial services in peak periods, means that the government has effectively ruled out reduced priced bus transportation as a weapon in the fight against urban road congestion. Road congestion is now a major political issue in Britain. Unless the much debated road pricing is adopted, the only solution available would appear to be further road construction, given that subsidies to the substitute transit mode are now illegal.

3.9 A Cost-Benefit Analysis

In addition to any overall gains or losses to society there are clearly substantial transfers of welfare occurring. Reduced wages and decreased subsidies mean that there is a redistribution of welfare from employees to passengers and taxpayers, and from passengers to taxpayers.

White (1990) has made standard cost-benefit calculations based on aggregate figures such as those presented in tables 1 and 2 of this paper. White excluded transfers and exogenous changes in fuel prices, and calculated a net annual gain of £10 million in metropolitan areas, but a net loss of £63 million in other areas. White concludes that the benefits in metropolitan areas would have been much higher had not demand declined due to loss of integration, and the instability of service in the period after deregulation. Outside of the metropolitan areas he attributes the decline in welfare to the increase in the number of vehicle-kilometers offered. Clearly one must assume that this has not been caused by kilometerage increases due to minibus conversions as operators would judge their introduction on a commercial basis. One must conclude that the loss in welfare has occurred where there has been duplication of service, and reduced load factors, during periods of competition.

White did not make any allowance for a shadow value of money saved by taxpayers. Government figures indicate that annual subsidies fell by about £220 million. This benefit largely accrues to local property taxpayers. In addition the sale of national government owned companies in England and Wales raised about £170 million (audited figures for sales in Scotland are not yet available). If one makes allowance for a shadow value of public funds raised by local taxation of 11% and for national income tax of 21% (Dodgson and Topham, 1987, 114-119) there is an additional benefit of £24 million a year plus a one-time benefit of £36 million to taxpayers.

4. WOULD A FRANCHISING SOLUTION BE PREFERABLE?

Since 1985 London has been gradually implementing a Demsetz (1968) style solution. The existing monopoly transit operator, London Transport (LT), was split into a central planning authority, and operating subsidiaries for the buses and subways. Progressively the existing bus routes are being placed out for tender in lots of individual routes or small area networks. Currently about a third of London kilometerage has been tendered, with plans for an additional 5% every year. LT's eleven bus operating subsidiaries compete against each other and outside

public and private sector companies for monopoly rights for a three-year period. No "on-the-road" competition is allowed. However, the re-election of the Conservative Party in 1992 will most likely bring this experiment to an end. LT's bus operating subsidiaries will be privatized and deregulation similar to the rest of the country will be introduced.

LT has been very concerned that passengers continue to regard the bus (and rail) system as an integrated network. Therefore while the non-LT firms who have been successful in the tendering process operate in their own liveries, the zonal fares and passes are the same as on untendered or LT routes. The central planning company prints and distributes the timetables, sells the passes and generally markets the network.

LT's bus operating subsidiaries have won about 60% of the tenders. In a number of cases they have set up new low-cost subsidiary companies, or implemented revised wages and working conditions at certain garages in order to retain work. One operating subsidiary was closed down as it could not compete effectively with other firms. Seven outside firms that are, or were, in the public sector, have been successful bidders, as have ten private companies. Two private firms, one a long-established coach company and the other backed by Hong Kong money, have developed substantial local bus operations. Therefore, unlike much of the rest of the country there are numerous operators providing service and competing for the new batches of tenders. On average there have been four bids for each contract.

Glaister and Beesley (1991) report that, on average, winning bids have been about 11% less than if LT had been continuing to operate the service under the cost conditions that prevailed prior to the tendering, after allowance has been made for the costs of administering the tendering process and monitoring the performance of the winning tenderer. Of course, LT's bus operations in non-tendered services may well be bearing additional costs as the company loses some of the operations yet cannot slim down its central engineering and administrative costs.

Since the seminal article by Williamson (1976), economists have been alert to potential problems of franchising. In the following paragraphs these concerns will be summarized along with some comments on how LT has tried to deal with them.

One concern is that the award criteria should be clear and fair. In general LT has used the "contract" type of tender. They specify the desired frequency, the common fare scale, and the type of vehicles (big bus, minibus, midibus) to be used. There is some flexibility in that the planning agency is willing to discuss specific routing and alternative vehicle specifications with tenderers. LT has also requested dual bids on the basis of new or used vehicles. In this way LT hopes to ensure both that firms bid on an equal footing and that a flow of new capital into the industry is maintained. Bids are on the basis of cost. All revenue that is collected being turned over to the central planning company. The primary reason for this choice of contract is that LT has been very successful in encouraging the use of passes. Therefore, the majority of revenue is not collected on the vehicles. The form of the contract has meant that both profitable and unprofitable routes have been placed out to tender.

Another problem is ensuring that firms execute the contract as specified. LT has a force of inspectors who monitor operations. There is a written performance specification, and a

penalty point system is employed for infractions. There have been instances of operators, both LT subsidiaries and private, having contracts canceled for poor performance. LT also supplies the ticketing machines to ensure that revenue and ridership are uniformly reported. As already mentioned the bids are on the basis of cost reimbursement. There is an agreed schedule of annual increase in contract amounts to represent inflation in the cost of factor inputs. This minimizes the potential for "capture" by incumbent firms.

A third potential problem is that the tendering authority must be impartial. There is clearly a danger of perceived or actual bias as LT owns some of the bidding firms. However, it is a testament to the tendering manager that his office's integrity is known and respected in the industry. Impartiality also implies that there is no assumption that incumbent firms have an advantage at contract renewal. The routes tendered early in the process are now in their second or third contract period. There is a regular turnover of incumbent.

A further problem of franchises is that the potential loss of a contract can cause uncertainty of employment of staff and the furloughing of capital equipment. While some LT subsidiaries have had to close whole garages when work has been lost, the regular turnover of contracts, the relatively small size of most tenders and the constant availability of new groups of tenders have minimized the problem.

White (1990), using the same cost-benefit methodology as applied to the rest of the country in the previous section, calculates that the initiatives in London have led to a welfare gain of £42 million per year. This good performance has occurred because there has not been the unpredicted drop in demand, and the wasteful competitive bus-kilometers witnessed elsewhere. The welfare gain has occurred at a time when subsidies have decreased in London by about £60 million dollars, giving an additional benefit of about £6½ million to London local taxpayers. This must raise the issue as to whether London points the way for a more optimal regulatory system.

5. POLICY CONCLUSIONS

The London experiment has allowed an interesting comparison of a Demsetz style competition for the market and deregulated competition in the market. The London solution is not a panacea. Operating costs may not be as low as with the pressures of free competition. Some may argue that service provision is determined by planners rather than by the market, although this is balanced by wasteful kilometerage operated during periods of competition in the provinces. In contrast, the precipitous demand reduction outside London is perhaps evidence that passengers prefer to purchase a network with a certain stability and a comprehensible fare structure. Thus White's (1990) cost-benefit analysis shows London to compare favorably to the provinces. This comparison may become even more favorable if agglomeration of firms in the provinces continues. Alas it is government policy to extend the "benefits" of full deregulation to London.

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Table 1. Demand Effects of Deregulation

Operator	Percentage Change 1985/6 to 1988/9			
	Vehicle Kms	Real Fares	Passenger Journeys	
			Predicted (1)	Actual
London Buses (2)	-6%	+8%	-9%	-1%
Seven metropolitan operators (3)	0%	+25%	-12%	-22%
Other local government owned companies (3)	+15%	+2%	+1%	-13%
Nationally owned companies in Scotland	-5%	+2%	-5%	-11%
Nationally owned companies in England and Wales (3)(4)	+13%	+2%	+1%	-4%

Source: Department of Transport (1990)

- (1) For description of estimation technique see the text.
- (2) London has not been deregulated.
- (3) Some of these companies were sold to the private sector during the period under review.
- (4) Figures are for 1985/6 to 1987/8.

Table 2. Cost Per Passenger Effects of Deregulation

Operator	Percentage Change 1985/6 to 1988/9		
	Real Cost per Vehicle Km (1)	Passengers per Vehicle Km	Real Cost per Passenger
London Buses (2)	-11%	+5%	-15%
Seven metropolitan operators (3)	-26%	+21%	-6%
Other local government owned companies (3)	-21%	-24%	+4%
Nationally owned companies in Scotland	-14%	-11%	-3%
Nationally owned companies in England and Wales (3)(4)	-22%	-15%	-8%

Source: Department of Transport (1989, 1990)

- (1) to 1987/8 only.
- (2) London has not been deregulated.
- (3) Some of these companies were sold to the private sector during the period under review.
- (4) Figures are for 1985/6 to 1987/8.

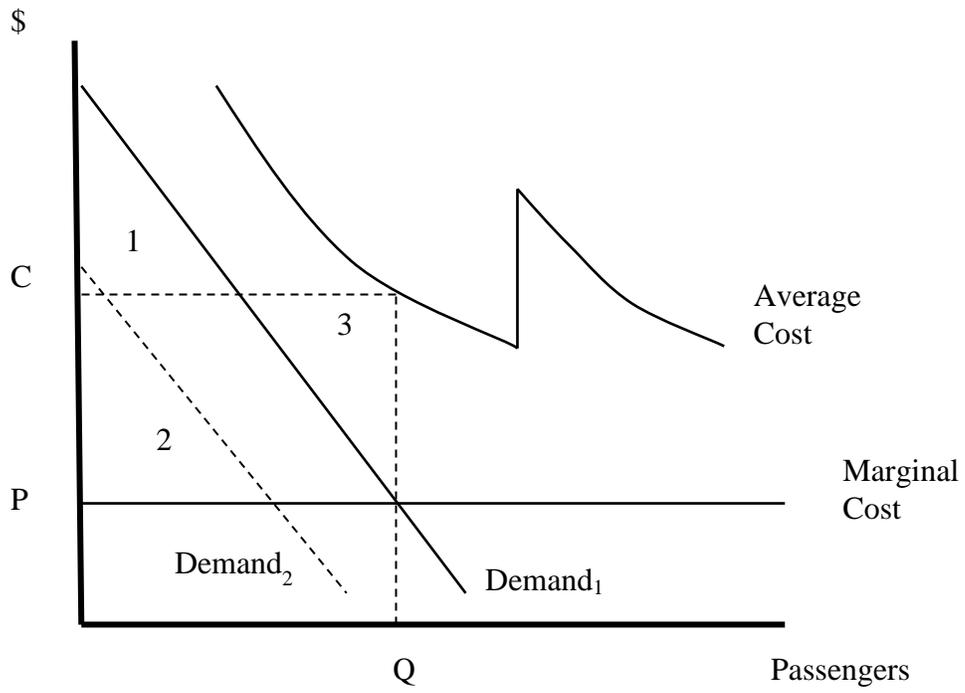


Figure 1.