EFFECTS OF BUS AND COACH DEREGULATION IN BRITAIN

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1. INTRODUCTION

This paper reviews the experience of bus and coach deregulation in Britain. The Transport Act of 1980 deregulated the express coach industry as from October of that year, and was followed by the Transport Act of 1985 which extended this process to local bus services from October 1986. Substantial short-term change has occured as a result of the latter, although long-term implications remain uncertain at this stage.

This process may be seen as a grand experiment, to test a theory (broadly speaking, that of the efficiency of the 'free market' economy). However, it does not meet the conditions of a controlled experiment, since an explicit control case is lacking. Not only have several variables been changed at the same time (such as the method of licensing, structure of the industry, and role of local authorities), but such changes are being made in an industry to which other important, external factors also apply - such as the form of the labour market, and changes in economic activity.

To some degree, however, London can be taken as a control case for local bus deregulation, since although radical changes have occured there also, they differ substantially from the deregulation applied to the rest of Britain. Under the London Regional Transport Act 1984, control of bus and underground services in London passed to central government. A degree of regulation remains, but a competitive tendering system has been introduced.

Extrapolating from previous trends in Britain is of limited assistance, since these themselves displayed marked variation in the period leading up to deregulation. Other countries cannot be taken readily as 'control' cases, due to the very different circumstances already applying before deregulation occured in Britain. However, for local buses, it is possible to use well-established elasticity coefficients in a time-series model to estimate the anticipated effects on ridership of the actual changes which occured in real fares and service levels. These are compared with the actual outcome. Changes in productivity and financial performance are also examined.

A scientific experiment is also distinguished by the ability to measure the effects of change in the crucial variable(s) through use of instrumentation under the supervision of the experimenter. In the bus industry, data collection has improved in some respects, notably through use of electronic ticketing systems, but remains highly inconsistent both over time and space. However, even though data available to management has improved, the degree of disclosure to others has greatly diminished. Under a competitive market, operators are naturally unwilling to supply data on ridership, revenue or costs, that may fall into the hands of potential competitors.

Although reasonably good data is now available for National Express - the principal express coach operator - no comprehensive figures for coach operation have been published since those for 1984. For local bus services, data has been published on each sector of the industry up to 1987/8 inclusive, but no detailed published data is available for individual operators or areas (except London Regional Transport), even those remaining in public ownership.

In the case of local bus deregulation, many short-term effects are still evident, and it is likely, for example, that examples of intense competition, and probable over-supply, in certain areas will result in one or other operator giving way, as has already occured in some instances.

In the case of express coach deregulation, a clearer picture may now be drawn given that a fairly stable network is now provided, and the nine-year period since its introduction.

2. PREVIOUS REGULATORY SYSTEMS

From the Road Traffic Act of 1930, the British bus and coach industry functioned under a strict system of quality and quantity regulation. This provided for quality control through driver and vehicle licensing, buses and coaches used for revenue-earning service being designated as 'public service vehicles' (PSVs). Of greater importance was the strict quantity control, based on a system of road service licensing (i.e. route licensing), in which exact route, timetable, and - by accepted convention - the fare scale, were specified. Licences were awarded by regional Traffic Commissioners, and in general, a new operator would find it difficult to obtain a licence for a competing service. Existing operators found it difficult to change fare levels and structures, or make experimental service changes.

Although evidence for economies of scale was generally lacking, the 1930 Act had the effect of encouraging a consolidation of large regional operators. through the takeover of existing smaller firms. These 'area', or 'territorial', companies eventually came into public ownership through those associated with the Railways being nationalised in 1948, and the remaining large group, BET, voluntarily selling its British operators to the state in 1969. Within England and Wales the regional companies were placed under the National Bus Company (NBC) and within Scotland under the similar Scottish Transport Group (STG). Many services in urban areas were operated by the 'municipals', systems controlled directly by local authorities.

By the 1970s, the traditional 'independent' sector (i.e. those companies which have always been in private ownership) included only one regional company and was composed mostly of small (1 to 20 vehicle) fleets, mainly engaged in excursion and contract work with only a very small share of scheduled local bus services (mainly in rural areas) and all-year-round scheduled express services.

3. EXPRESS COACH DEREGULATION

The Transport Act of 1980 deregulated the quantity and price control of express coach services (redefined as those carrying all their passengers a distance of at least 30 miles). It also liberalised to some extent the licensing of local bus and coach services. Price control was effectively

abolished, leading to significant changes in fare structures, and greater ease in changing fare levels by operators.

At the same time, the 1980 Act strengthened quality control by introducing a system of operator licensing, following success of a similar system in road freight. This has been retained under subsequent local bus deregulation.

The effects of express coach deregulation were reviewed by Robbins and White at the 1986 World Conference (1). The main effect had been in sharp reductions of fares, by as much as 50%, with rapid growth in traffic. On long-distance services provided by the major operator, National Express, an overall demand increase of about 50% had occured by 1983. Trunk routes, which had often experienced strict capacity control to protect railways, saw greater increases. Service frequencies were increased, and higher-quality services, offering toilet facilities and refreshments, have come to be provided on most long-distance routes. Many new coach users were drawn from railways, who in turn introduced lower-price off-peak fares for long-distance users. Table 1 shows data for the express and intercity rail sectors since 1980. Note that all revenues are shown in money, not real, terms.

Table 1 : DATA ON EXPRESS COACH TRAVEL, AND THE BRITISH RAIL INTERCITY SECTOR, FROM 1979

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Total coach passenger trips (mill)	15	15	17	18	17	17	-	-	-
Total coach passenger revenue (£ mill)	39	47	48	58	61	63	-	-	-
National Express passengers (mill)	10	9	12	14	13	15	15	15	15
NE revenue (£ mill)	-	31	41	52	51	57	71	73	78
BR Intercity Sector:									
Pass-km (100 mill)	126	121	118	114	123	128	125	127	128
revenue (£ mill)	343	410	419	371	467	496	535	583	628

Sources : Transport Statistics Great Britain 1976-1986 (HMSO, London, 1988) for total coach passengers and revenue (tables 2.33 and 2.34), and BR Intercity sector data to 1986 (table 3.2). Transport Statistics GB 1977-1987 table 3.2 for 1987 Intercity sector data.
Rod Davey 'Express Developments' Coachmart (EMAP Publications, Peterborough) 30 March 1989, pp 20-23, for National Express data.

No separate express coach data have been compiled by central government since 1984. All figures in table 1 have been rounded off to the nearest million. Note also that some of the National Express cross-country services are registered as local bus services, giving an 'express' passenger figure as such of about 1 million less in each year than shown. Thus, in 1984, about 14 of the 17 million express coach trips were by National Express (then a part of the state-owned National Bus Company). Together with a figure approaching 1 million for the Scottish Bus Group's "Citylink" services, the independent sector was left with only about 2 million of the express trips, confirming its

modest share of the post-deregulation market.

The rapid growth up to 1984, as described in 1986 (1) has been followed by a period of stability in National Express traffic, and, so far as one can tell, in other express services. The initial growth was associated with very low fares, to which the railways responded from 1981. As a result, some traffic lost to coach was regained, and new traffic generated. The net financial effect on rail was probably beneficial, and when benefits to rail as well as coach users are included an overall economic benefit resulting from deregulation could be demonstrated at fare levels applying in 1982/3 (2).

However, some negative effects occured, notably in higher fares and reduced services on the lower-density cross-country routes, as a result of cross-subsidy within the express network being cut. Fares also rose on both coach and rail network in real terms from 1982, although without reversing the growth trend in traffic.

The major unexpected outcome was the continued dominance of the major carriers, then in the public sector. National Express quickly secured much of the traffic growth on trunk routes, many independents withdrawing after a short period. On many long-distance all-year services the traditional independent element has remained small or non-existent, except where specialising in a market niche, such as offering a higher-quality service or on the Scotland-London trunk routes.

These results, which also have parallels in the experience of airline deregulation, suggest that the naive version of contestability theory (assuming, for example, zero entry and exit costs) does not apply even in this case where entry costs should be low (3). Although there is no reason to believe that economies of scale on simple measures (such as cost per vehicle-km) apply, economies do appear to exist in marketing. National Express had the advantage of a nationwide network of agents, a national timetable book, the ability to afford television advertising, and the knowledge of its existing network. The long-distance coach market is characterised by each user making only infrequent journeys. Thus, prior knowledge of facilities available is essential, and serves as an entry barrier to newcomers.

NBC was broken up and privatised under the Transport Act 1985 (see below), National Express passing to a management buy-out. Under the Transport (Scotland) Act 1989 the same process is now planned for the Scottish Transport Group, whose Citylink company fulfills a similar role. After a period of some instability in the network of express coach services, and rapid turnover among smaller operators, much less rapid change has been seen since 1985. The most substantial innovation in this period has probably been the 'Oxford Tube' coach service, which began running between Oxford and London in March 1987 in competition with an already intensive service operated by the local former NBC subsidiary. Subsequently, both were increased to give a 20-minute frequency throughout the day in March 1988, producing probably the most intensive inter-urban coach operation in Europe.

Although National Express were able to raise fares from their very low post-deregulation level with little effect on traffic up to 1985, some limits may have been experienced since then. For example, the low-price mid-week return fares, originally offered only in the winter, were extended to run

throughout the year in 1987, and other reductions have also been made.

The structure of the express coach network tended to focus to a greater degree than before on major cities, as cross-country services were thinned out, and interchanges developed at 'hubs' such as London Victoria. However, a major change has come about through the growth of direct services to airports, notably the routeing of most services from the west of London via Heathrow airport and introduction of other services direct to that point. From some regions, around 30% of air passengers now reach Heathrow by long-distance scheduled coach, and this share continues to grow. Fuller detail is given in other research at PCL (4).

Growing traffic congestion in central London and the energetic response of British Rail has resulted recently in a decline in long-distance scheduled coach traffic, vehicle movements falling by about 25% between 1986 and 1988 (5). The overall stability in National Express patronage appears to be a result of growth in airport traffic offsetting the decline on central London services.

4. LONDON COMMUTER COACHES

A large long-distance commuting market had developed around London by the late 1970s, mostly served by rail. The deregulation of express services in 1980 (i.e. those carrying all their passengers distances of at least 30 miles from central London) thus included part of this catchment zone, and competing coach services soon developed. Subsequently, many were licenced as local bus services, enabling shorter distance traffic to be handled. In contrast to long-distance coaoh deregulation, development was very slow at first, and did not accelerate until the rail strikes of 1982. Growth continued until 1986, when about 400 vehicles operated in each peak period. Although the large public sector operators gained a majority of the market, the independents proved more successful than in the long-distance market, with about 40% of the total. This may be explained by the need for very flexible working practices and the fact that many commuter coaches draw their users from a small catchment area, who travel, by definition, very frequently.

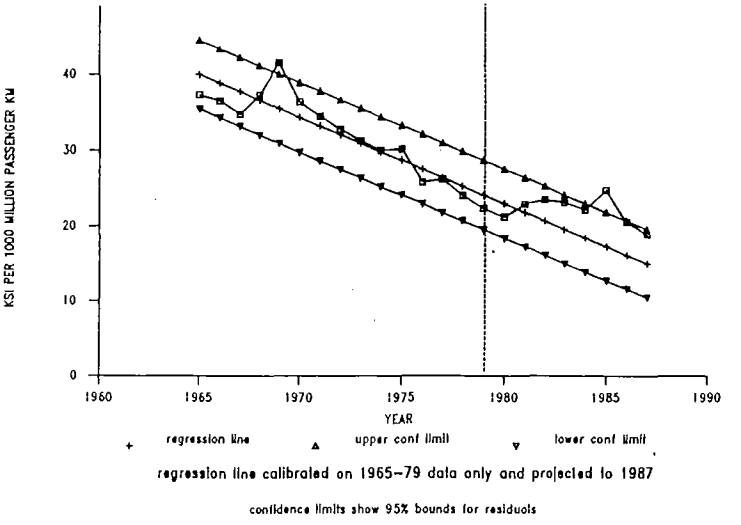
However, commuter coach flows represented only 1% of all commuters into central London, although somewhat higher (around 15-20%) on certain corridors where they played a major role, such as that from the Medway towns in North Kent.

Since 1986 a substantial fall - of about 25% - has occured in commuting coach movements (5). Reasons include worsening traffic congestion in London, some improvements in rail services whose unreliability had previously caused users to shift to coach, and doubts among the coach operations regarding the financial viability of such peak traffic. Total rail commuting into London has grown rapidly since 1983, due to growth in employment and the impact of the comprehensive travelcards. Shifts to or from commuter coaches are a marginal factor (except on certain specific routes).

5. TRENDS IN SAFETY

Concern was expressed at the time of express coach deregulation in 1980 that safety levels would fall. Sufficient time has now elapsed to enable fairly clear conclusions about trends in bus and coach safety as a whole since then to be reached. Figure 1 shows in bus and coach passenger casualties (killed and seriously injured, per 1000 million passenger-km.) in Britain between 1965 and 1987, derived from an extensive study of bus and coach safety in Western Europe at PCL (6).

Figure 1: BUS AND COACH PASSENGER CASUALITIES 1965-1987



The measure of 'killed and seriously injured' (KSI) is the most useful indicator over time. Absolute numbers of fatalities in any one year are small and highly variable. Hence, determining a meaningful trend is difficult. Slight injuries are not comprehensively or consistently recorded.

There is no general indication of a worsening of safety levels since express coach deregulation in 1980, although the previous trend toward reduced casualty rates 'flattened out'. However, the casualty levels in the mid-1980s all lie above a trend line calibrated on the 1965-1979 period, and although all but one year are within the 95% confidence range for residuals, the serial correlation involved suggests that the previous linear trend is no longer representative.

Although much public concern has been shown over 'coach' safety, there is no clear distinction between 'bus' and 'coach' in UK data. As a proxy, the composition of accidents by road type may be used (see table 2). These figures show clearly that it is activity in built-up areas - situations that predominantly involve local buses (not deregulated until 1986) - which account for the majority of casualities. Coach-type activity only accounts for a minor proportion of casualties.

These findings with respect to express coach safety since deregulation are consistent with findings for the aviation and trucking industries in the United States (7).

Table 2 : COMPOSITION OF PSV PASSENGER CASUALTIES BY ROAD TYPE

Percentages, based on 1981-85 accident totals (ref.6).

	Fatalities	KSI	All severities	Vehicle-km
Built-up areas	72	82	89	61
Motorways	13	5	2	9
Non-built-up :				
A-class	14	10	6	23
Other	1	4	3	7

6. CHANGES IN LOCAL BUS REGULATON

Ridership on local bus services declined during the 1970s, from 7,533 million journeys in 1975, to 5,518 in 1982: see figure 2. This decline, however, was lower in the metropolitan counties, where assistance to operators was greater, and was generally reversed in the early 1980s following the implementation of low fare policies. In 1984, national local bus trips rose to 5,650 million (8).

However, the increased financial support may well have aggravated conflicts between central and local government. This led firstly to the Transport Act 1983, which required explicit planning and justification of financial support to be given in the metropolitan counties (PTEs), as described at the 1986 WCTR by the authors (9). However, even as this came into effect, much more radical changes were set out in the 'Buses' White Paper of June 1984 (10). These proposals, largely unchanged, were enacted in the Transport Act 1985, as follows:

Definition of service. The previous distinction between 'stage' and 'express' was changed to one based on a 15 mile distance (i.e. any service carrying all passengers at least 15 miles, rather than 30, became 'express'). 'Stage carriage' services are now called 'local'. The notification of express services under the 1980 Act was dropped, and thus virtually no official information is now gathered on such services.

Route licensing Road service licences are no longer required. Instead, any operator wishing to run a local bus service must register it with the area Traffic Commissioner, at least 42 days before its commencement.

Financial support Network support to fares and service levels is no longer permitted, In its place, local authorities may provide services (in addition to those registered as commercial by their operators) by specifying the services required, and then putting them out to competitive tender. This reduced the scope for cross-subsidy, which in some areas had remained at least as important as direct external support. Strict Expenditure Levels (ELs) were

placed on the Passenger Transport Executives' spending in the former metropolitan counties.

Concessionary fares Provision for concessionary fares to groups such as the elderly, disabled and children was continued, but extended to all operators in a local authority's area on a common basis.

Other grants The 100% rebate of fuel duty for local bus services remained. The new bus grant, originally 50% of the cost of bus purchase, had already been phased out by 1986 (long-distance express services have never qualified for either of these). Some limited assistance for capital schemes is possible under section 56 of the 1968 Transport Act, but in practice little has been available. In view of the threat posed to rural areas from reduction in cross-subsidy two specific new grants were introduced:
- a transitional grant to rural services paid at a flat rate per bus-mile in the areas concerned, but only for a temporary period, and to cease entirely in 1990.
- the 'Rural Transport Development Fund' , to promote innovative services in areas containing population centres of less than 10,000 people.

Structure of the industry The operations under local authority control were placed under separate companies, owned by the local authority (being known as 'Passenger Transport Companies', or PTCs). No subsidy, other than certain transitional costs, could be provided, except in the same form as to any other operator (concessionary fares, tendered services). The National Bus Company was split up and privatised (this process being completed in March 1988), the intention being for each subsidiary to be sold off separately to increase the degree of competition (in contrast to the privatisation of entire industries en bloc, such as British Airways).

Taxis 'Shared taxi' and 'taxibus' operation is now permitted.

Competition legislation Previous exemptions for the bus industry from competition legislation were removed. Agreements between operators which might be deemed restrictive have to be registered with the Office of Fair Trading (OFT). This marked a sharp reversal from the duty previously given to county councils to 'co-ordinate', or to 'integrate' (metropolitan counties) placed on local authorities by previous Acts. Although some jointly-operated services remain, extensive co-ordination agreements ceased at, or before, implementation of the Act from 26 October 1986 - for example, that in Maidstone between Maidstone Borough Transport and the NBC subsidiary Maidstone & District (11).

Reorganisation of local government Following earlier conflicts between central government and the metropolitan councils - of which their support for low bus fares was one major example - the six English metropolitan counties, and the Greater London Council (GLC), were abolished from 31 March 1986 under the Local Government Act 1985. The GLC had already lost control of London Regional Transport to central government 1984. In the metropolitan counties, the Passenger Transport Authorities continued in being, but as bodies composed of elected members nominated from the constituent local authorities (metropolitan districts) in the area covered. Strathclyde PTE in Scotland continued under the control of the regional council.

Bus Stations. Access to terminals gave an advantage to National Express in long-distance coach competition. A requirement was therefore introduced that stations should be open to all operators. In practice the issue is less important in local bus operation, where most passengers are picked up on-street, and indeed some services have moved out of stations since 1986, both to save money and improve passenger access.

7. EFFECTS OF LOCAL BUS DEREGULATION

Deregulation began on 26 October 1986. Many operators considered that even quite low-density routes were 'commercial' in Monday to Saturday daytime operation (around 0800 to 1800). However, early morning, evening and Sunday journeys on these services, together with peak only school services, were often not registered. Most of these 'gaps' were covered by tendered services for local authorities.

As indicated in section 1, any assessment of the major effects must be tentative, due to the short period since the start of deregulation.

Earlier, from the start of the 1986/7 financial year (1 April 1986), sharp fare rises had occured following the abolition of the Metropolitan Counties and imposition of Expenditure Levels by central government (see above). In South Yorkshire, fares rose by about 250%, and in Merseyside by about 80%. The year 1985/6 is thus the last year before the effects of changed central government policy became apparent.

Following the publication of the local bus service statistics for 1987/8 - the first full year after deregulation - by the Department of Transport (8) , some interim conclusions can be drawn. However, the statistics available are disaggregated only by major sectors within the industry (by type of geographical area, or type of operator) and not by individual operators. Substantial variations within certain sectors, especially the metropolitan counties, are thus obscured.

While confirming the government's claims for gains in bus mileage run and reductions in operating cost per mile, the 1987/8 statistics also show that an alarming drop in ridership has occured, albeit at a slower rate between 1986/7 and 1987/8 than immediately after deregulation. The combination of extra mileage and lower traffic means that loadings have fallen sharply. As fares in most areas (other than certain metropolitan counties) rose closely in line with inflation, revenue per vehicle kilometre has generally fallen in real terms, offseting much of the gain in operating cost.

Table 3 shows changes between 1985/6 with 1987/8. Data for bus-kilometres operated, passengers carried and a real fare index come from reference 8. The observed '(obs)' percentage change in ridership is derived directly from the third and fourth columns. Estimates of the expected change in ridership '(exp)' were made by assuming an underlying trend decline of -1.5% per annum (-3% over the two year period), a -0.3 elasticity applied to the percentage real fare increase, and +0.4 elasticity applied to the percentage change in bus-km run (derived from the first and second columns).

Table 3 : Changes in local bus operations in Britain, 1985/86 to 1987/88

Operator/ area	Local bus-km (millions) 85/6	87/88	Local bus pass (mill) 85/6	87/8	Real fare change (%) 85/6-87/8	Change in ridership (%) (exp)	(obs)
London (all)	273	278	1152	1269	3.6	- 3.6	+10.2
Met Counties	575	617	2069	1733	29.0	- 8.8	-16.2
English shires	848	1013	1587	1534	1.6	+ 4.3	- 3.3
England (all)	1696	1908	4807	4536	9.5	- 0.9	- 5.6
Scotland	285	330	671	648	0.3	+ 3.2	- 3.4
All GB	2076	2342	5641	5340	7.5	- 0.1	- 5.3
All GB excluding London	1803	2064	4489	4071	8.4	- 0.3	- 9.3
London Buses	261	243	1146	1200	3.6	- 6.9	+ 4.7
Met PTCs	471	465	1828	1486	25.8	-11.3	-18.7
Municipal PTCs	221	239	784	695	2.6	- 0.5	-11.4
SBG	169	172	307	277	1.7	- 2.8	- 9.8
NBC companies	783	881	1403	1345	1.7	+ 1.5	- 4.1
Independents	172	341	173	337	1.7	n/a	n/a

The 'real fare change' is derived from an index of fares, adjusted for inflation. The term 'shires' covers all of England outside London and the Metropolitan Counties. Although the shires are predominantly rural, most bus traffic within them is concentrated in urban areas, which include major regional centres such as Nottingham and Bristol in addition to smaller towns. London is not deregulated, but forms a telling comparison with the rest of Britain.

Comparisons are most clearly highlighted by looking at percentage changes. The last column shows the actual percentage change in trips between 1985/86 and 1987/8. Overall, there was a drop of 5.3% in Britain as a whole (the 'All GB' row). However, in London (top row) there was an increase of 10.2% - in marked contrast to trends elsewhere. Taking all of the deregulated areas in Britain (i.e. excluding London, seventh row) the overall fall was 9.3%. It was most acute in the old metropolitan counties, at 16.2%. It was least evident in the English shires, at 3.3%.

On the whole, the trends outside London were a combination of a sharp drop in 1986/87 and a lower reduction in 1987/8. This was associated with the particularly severe disruption to networks immediately after deregulation, which was offset later in some cases by an element of stability, and increases in total vehicle-km. run.

If data is grouped by operator type, the broad pattern is similar, but not identical. Where the established operators have lost parts of their traditional market through tendering or commercial competition, they have often lost more traffic than the industry as a whole in the areas they serve. For example, the Metropolitan PTCs lost 18.7% of their trips over the two years (compared with 16.2% for all operators in the Metropolitan Counties) and SBG some 9.8%, compared with 5.3% for Scotland as a whole. This also applies

in London, in that the encouraging overall growth of 10.2% is less when London Buses Ltd. as such is considered (4.7%), due to growth of tendering to other operators under LRT. This shift of bus-km run between operators makes the marginal elasticity coefficients less appropriate in such cases, especially for the independents, where much of the growth represented a transfer of low-density routes from previous public-sector operators, for which the comparison between 'expected' and 'observed' trends is not applicable (n/a).

An overall short-run fares elasticity of about -0.3 may be assumed (ignoring effects of change in fares structure, such as introduction of travelcards). Further discussion of the assumptions behind the 'expected' changes may be found in the authors' paper presented at the International Conference on Bus and Coach Competition and Ownership held in Australia in May 1989 (12).

Clearly, some reduction in traffic would have been expected in the Metropolitan areas where sharp fare increases occured. However, in all other areas outside London the substantial increase in bus-km run would be expected to give an increase in traffic. Outside London, there was an overall rise of 14.5% between 1985/6 and 1987/8, ranging from 7.3% in the metropolitan counties to 19.5% in the shire counties. Clough (13) indicates that the level of bus-km outside London at May 1988 was running at some 17% above the 1985/6 level. As experience of minibus conversion has shown (14), demand is highly sensitive to frequency of service, over wide ranges of service level changes.

A comparison of the penultimate and last columns in table 3 shows a fairly consistent difference between 'expected' and 'observed' percentage changes in ridership of about 7 percentage points for all areas outside London. For example, the expected drop in the metropolitan counties, at 8.8%, is 7.4 points less than that actually observed, of 16.2%. In some other areas, such as the English Shires, a net increase in traffic would have been expected, due to the very high growth in service level, compared with the observed drop of 3.3%. Negligible changes would have been expected in Britain as a whole, and Britain excluding London - the underlying trend and effect of real fare increases being offset by rising vehicle-km.

The main reason for this would appear to be the loss of ridership due to instability in the network, and poor information to passengers. In the case of the Metropolian Counties, this shows up as a large drop in traffic even after allowing for the effects of real fare increases. Elsewhere, the change is more or less what would have been expected without taking into account the service level increase, but the latter seems to have had very little effect compared with that which would be normally expected. In other words, the net effect is as if the extra mileage has generated very little new traffic overall. This also may be associated with passenger uncertainty (15).

In cases where the increase in service level was due mainly to intense competition (as in Glasgow, for example), frequencies were raised on routes which already had high levels of service, and often consisted of unco-ordinated services, resulting in bunching and irregularity. The benefit to the passenger was small, compared with the earlier cases of minibus conversion, which were often associated with dramatic increases in service from a low initial level as mentioned above. This effect could also be represented by use of a lower elasticity than +0.4 for bus-km changes. However, the aim of the calculation was to show the expected changes under

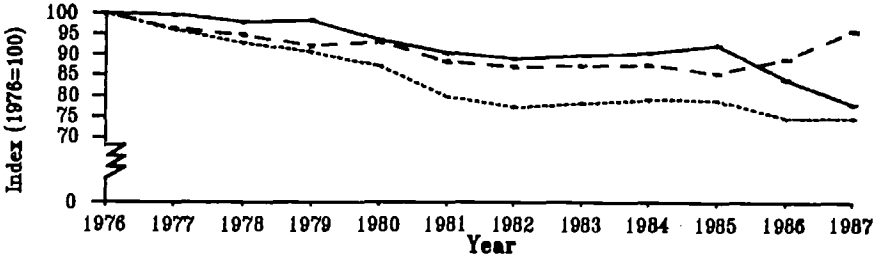
pre-deregulation conditions, i.e. additional bus-km deployed mainly in areas of existing low to medium service level, rather than to augment already intensive services.

It is of interest to note that a similar time-series model approach has been adopted by a team at Harvard University (16), examining the metropolitan counties alone, but over the same period as considered here. Their differences between observed and expected patronage change are marginal. This appears to arise primarily from discrepancies in the method of calculating the fares index. Further analysis of the differences is in progress.

Outside London, the combined effect of falling patronage and rising vehicle-km. has had a disastrous effect on average loadings. Taking Britain as a whole, the average number of passenger trips boarding per vehicle-km (a proxy for average loadings, in the absence of any data on change in trip length) fell by 16.0%. As would be expected, the Met Counties show the worst result, a fall of 21.9%. However, the English Shires fared little better at 19.1% down, although due to rising vehicle-km rather than falling total traffic.

This decline is ironic in view of the emphasis placed on this indicator in the 'Buses' White Paper (10). The greater fall in passenger trips than vehicle-km from 1972, and resulting drop in boarding rates was highlighted as an example of 'mismatch' between supply and demand. The overall trend since 1974 is shown in Figure 2. 'Local bus passengers' (dotted line) fell to about 75% of the 1976 level by 1987/8. 'Vehicle-kilometres' (dashed line) fell until 1985/6, then rose steeply. The combined effect on 'Passenger boardings' per bus-km (solid line) was to produce a fluctuating trend until 1985/6, thereafter a sharp fell in the last two years. On this criterion, performance has radically worsened since deregulation.

Figure 2 : Local bus services in Great Britain 1976-1987 - passenger trips, bus-kilometres and passenger boardings



These reductions in average loadings largely offset the savings in operating costs per bus-km. On average this fell by about 20% in real terms between 1985/6 and 1987/8 (12), although varying somewhat within the industry, being greater in the Metropolitan PTCs (about 25%) and least in London (about 10%). Note that these trends are for operating costs only, and do not include depreciation or leasing charges.

The combination of lower operating costs per kilometre and lower average loadings largely offset one another. Overall, operating costs per passenger trip fell by about 6% in real terms, with little variation by area outside London, apart from the Met Counties.

London in contrast, has the best of both worlds: rising traffic and a falling cost per bus-km, giving a reduction of about 18% in cost per passenger.

The reduced cost per vehicle-km arises mainly from increased staff productivity, but also a fall in real fuel prices, and substantial growth in minibus operation. This now represents about 20% of all local bus kilometres. As a result, average vehicle size has fallen in about the same proportion as average load, i.e. load factor (average load as a percentage of places offered) has changed very little. Note, however, that it is bus-km rather than places offered which remains the best proxy for level of service included in the estimates of 'expected' patronage change quoted earlier, since passengers respond to changes in frequency of service and waiting time rather than capacity as such (provided that they can board the first bus to arrive).

The role of independents in local bus operation virtually doubled between 1985/86 and 1987/8 (table 3). Note that the absolute average boarding rate is very low (1.0 passenger trips per vehicle-km in 1987/8, compared with 2.3 for all operators), confirming the independents' role as primarily in low-density rural services. However, substantial growth in urban areas has also occured, both on tendered and commercial services. Some is by old-established firms moving more strongly into the urban bus market but other growth is by new firms, such as Thames Transit in Oxford (a subsidiary of Devon General, the first NBC bus company to be privatised), the Trimdon Motor Services group in the North East, and, until mid-1988, the United Transport subsidiaries in Preston and Manchester. There are increasing signs of commercial bus operation by independents who initially entered the market running only tendered services. It should also be borne in mind, however, than increased diversification from the early 1980s has led to a substantial increase in coaching work by PTCs, a market traditionally the preserve of independents and regional companies (9).

In considering the extent to which public expenditure fell as a result of increased efficiency, rather than increased fares or reallocation of expenditure from local to central government, the changes appear fairly marginal, around 5 to 10%. Although direct spending by local authorities on bus services fell by about 40% in real terms between 1985/6 and 1987/8, this was partly offset by additional spending on concessionary fares, rural grants, the fuel tax rebate and administrative costs, to give an overall fall in public expenditure on buses outside London of about 16% (or about 6% per passenger trip). Conversely, within London total public expenditure on buses fell by 34% in real terms over the same period. Coupled with the growth in demand, public spending per trip fell by about 52% (12).

An assessment of the overall costs and benefits of local bus deregulation, including changes in public expenditure and effects on users, is now being made (17).

8. CONCLUSIONS

Whereas express coach deregulation in 1980 displayed fairly clear benefits, the same cannot be said for local bus deregulation from 1986. Express coach traffic rose rapdily, and has remained at a higher level than previously. Local bus traffic outside London to a level about 7% lower than would be expected, in contrast to the substantial increase in service levels. In both cases, the role played by independents (private sector) operators expanded, but this was much more noticeable in short-distance markets (London commuting, and local bus).

Results for the coach industry also show the need to monitor trends over a longer period than that immediately after deregulation. Growth in the long-distance market ceased from 1984, in aggregate terms, but the commuter market did not expand rapidly until 1982. Some trends have been reversed, notably in commuting, and long-distance services into London, which have declined substantially since 1986.

In the case of local bus operation, findings must be provisional. A longer period of monitoring is clearly desirable to assess the extent to which high service levels now provided will continue, and whether operators can resume fleet renewal at normal rates.

In monitoring both coach deregulation and that of local buses, the need for good quality public data is evident. While it is understandable that individual operators are more reluctant to disclose data than before, attitudes of governmemt are also critical (for example, in air tramsport, good quality comprehensive statistics continue to be available despite less strict regulation than before). The lack of nationally published express coach data since 1984 is highly unsatisfactory, and the lack of publication of individual operator data for local bus services since 1985 likewise. The debate on the effects of deregulation becomes unnecessarily subjective as a result.

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