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Trends in Older and Disabled Free Concessionary Bus Trips – evidence from the second year of free local schemes in PTE areas

Report by Minnerva, 26th November 2008

INTRODUCTION

It is now more than two years since statutory free concessionary travel for older and disabled bus passengers was introduced. The increase in concessionary trips generated by the change to a free fare, where previously the fare was not free, provides important evidence regarding the sensitivity of bus passengers to changes in fare, and hence the reimbursement that bus operators should receive to ensure that they are "no better off and no worse off".

The elasticity value, which represents the sensitivity of passengers to fare changes and is a key part of the reimbursement calculation, has been subject to considerable debate, especially when operators have appealed to DfT on the grounds that reimbursement arrangements are unfair. In December 2007, DfT published guidance on reimbursement which recommended explicit assumptions about how elasticities could be expected to evolve over time, as short run reactions to the change in fares which took place in April 2006 are added to by longer term reactions. In particular, it recommended that elasticities applied to calculation of reimbursement should be higher than 2006-7 values by:

- 25% in 2007-8;
- 38% in 2008-9;
- by 44% in 2009-10;
- and by 50% in 2010-11.

The guidance suggested that a new equilibrium position was likely to be reached after five to seven years, reflected in the price elasticity in 2010-11.

Data is now available on concessionary journeys made under Passenger Transport Executive schemes for 2007-8, the second year of statutory free travel, which might be used to inform judgements about increases in elasticity values. In particular, it provides evidence about the second year of these longer term elasticity impacts. This note summarises this data on the trend in concessionary trips in the PTE areas, and identifies apparent implications of this data for the evolution of elasticities over time.

There remain some uncertainties about both relevant data (in particular, changes in passholder numbers), and its interpretation given that it may be coloured by anticipation of the national concession that came into effect in April 2008. It is also important to note that whilst the impacts on trips of the first two years of local free travel can be measured with reasonable accuracy, it will become

increasingly difficult to isolate the impact of the April 2006 change in policy from other influences in subsequent years. From 2008-9 and onward they will be overlaid by the impact of the free National scheme, and distorted by the reallocation of responsibility for reimbursement between TCAs. External influences (e.g. motoring cost changes) will also complicate analysis. Thus the second year change, providing a reasonable view of the beginning of middle run effects, may be one of the few indicators at a local level of the long run impacts of the policy brought in on April 1st 2006.

SUMMARY OF DATA

The headline data is summarised in Table 1. Note that the figures have been "normalised" to a 12 month period including one Easter holiday. Because of the changing dates of Easter, 2005-6 included no Easter holiday period, 2006-7 included one, and 2007-8 included two. The adjustment is based on analysis of historic Nexus data (from 2004-5), but is consistent with separate advice from Centro with regard to Easter holiday impacts.

	GMPTE	Nexus	SYPTE	Metro	Centro	Mersey-travel
2005-6 trips (m)	33.4	30.1	27.5	36.6	74.2	44.8
2006-7 trips (m)	42.6	37.3	33.8	45.4	74.7	43.1
1st year increase	27.6%	24.2%	23.0%	24.1 %	0.6%	-3.8%
2007-8 trips (m)	43.1	39.6	36.4	46.6	74.6	42.8
Gross increase over 2006-7	1.3%	6.1%	7.8%	2.7%	-0.2%	-0.6%
Increase over 2005-6	29.3%	31.8%	32.6%	27.4%	0.5%	-4.4%

Table 1 Bus trips by older and disabled concessionary passengers in PTE areas

Data is shown for all six English PTES, although only the first four, which did not have pre-existing free concessionary fare schemes, can be used for inferring elasticities. The Centro figure for 2005-6 includes a minority of non-free concessionary passengers. GMPTE figures relate only to those concessionary trips for whom the concessionary fare changed in April 2006, and exclude free disabled passengers, and non-zero am peak passengers, for whom the concession did not change. These figures are believed to be consistent for the purposes of year-on-year comparisons, but may not be identical to those reported by individual PTEs in other contexts.

In the first year following the introduction of free travel, the typical increase in concessionary trips in 2006-7 compared with the previous year was about 24%, for the four PTEs which changed from a flat fare. The highest increase was in Greater Manchester and the lowest in South Yorkshire. This is against a background of a consistent underlying decline in concessionary trips across most

PTE areas, as is reflected in the data for Merseytravel, although there was a very slight increase in trips in the West Midlands[1].

In 2007-8, further increases in concessionary travel took place in the four PTE areas which had moved to free travel in April 2006. The least of these increases (1.3%) was in Greater Manchester, and the largest of these further increases was in South Yorkshire, where passenger numbers increased by 7.8% over the previous year. The total change in South Yorkshire was 32.6% when compared with 2005-6.

Detailed data has been examined for some of these areas, providing some insight into the pattern of growth within each of the two years since free travel was introduced.

In Tyne and Wear, trip data is collated every four weeks and trends since 2001-2 are shown in Figure 1. The darker line shows seasonally adjusted trips, while the lighter line is the raw data. The units are 1000s of trips per four week period.

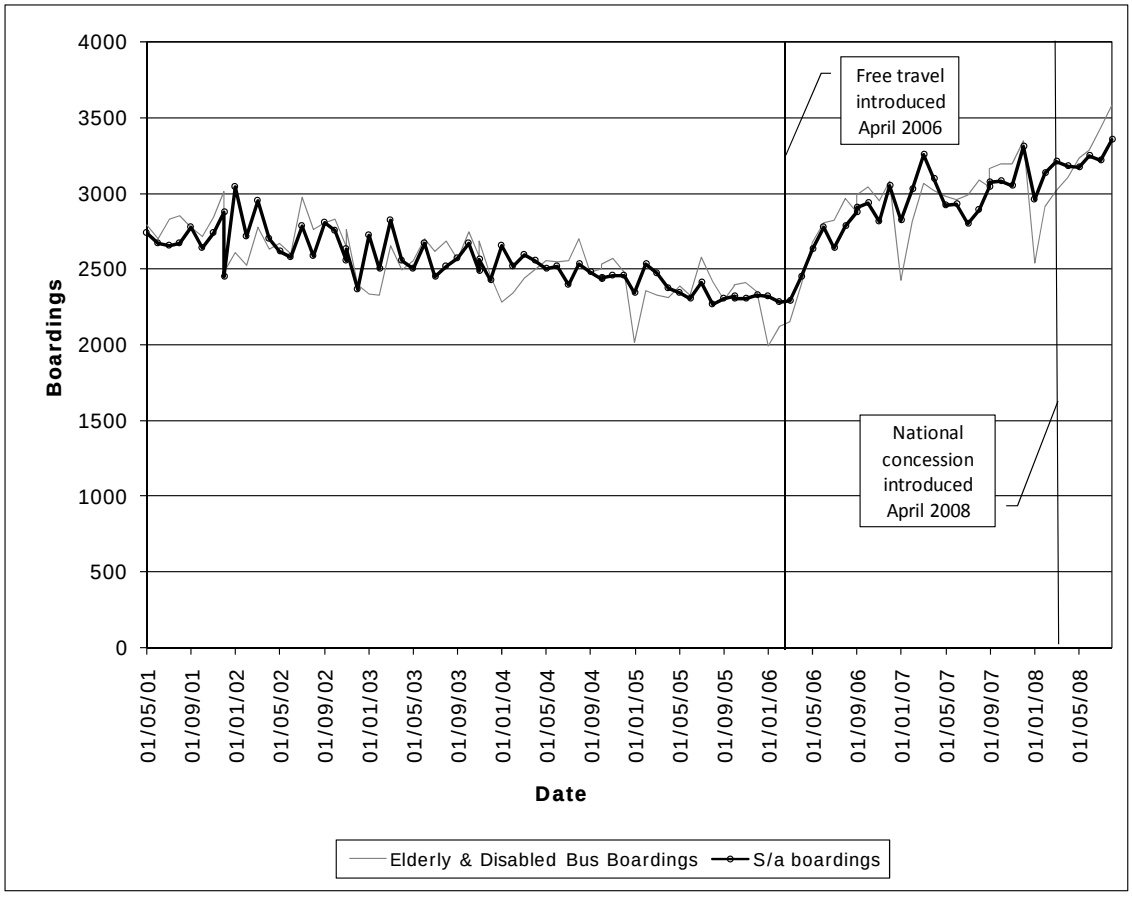

Figure 1 Concessionary Travel Trends in Tyne and Wear

[1] This runs against the grain of previously observed decline, and may reflect increased awareness of the existing free concession brought about by national publicity for the statutory free scheme.

The underlying decline in trips that preceded the introduction of free travel is clearly shown, together with the steady rise in trips that followed throughout both 2006-7 and 2007-8.

This contrasts with the pattern in Manchester, as shown in Figure 2. Data is collated by GMPTE on a quarterly basis and so there is not the same level of detail available as in Tyne and Wear, and the order of magnitude of trips per observation will be different. Here, the initial substantial increase in the first two quarters after free travel was introduced was followed by quite modest subsequent increases.

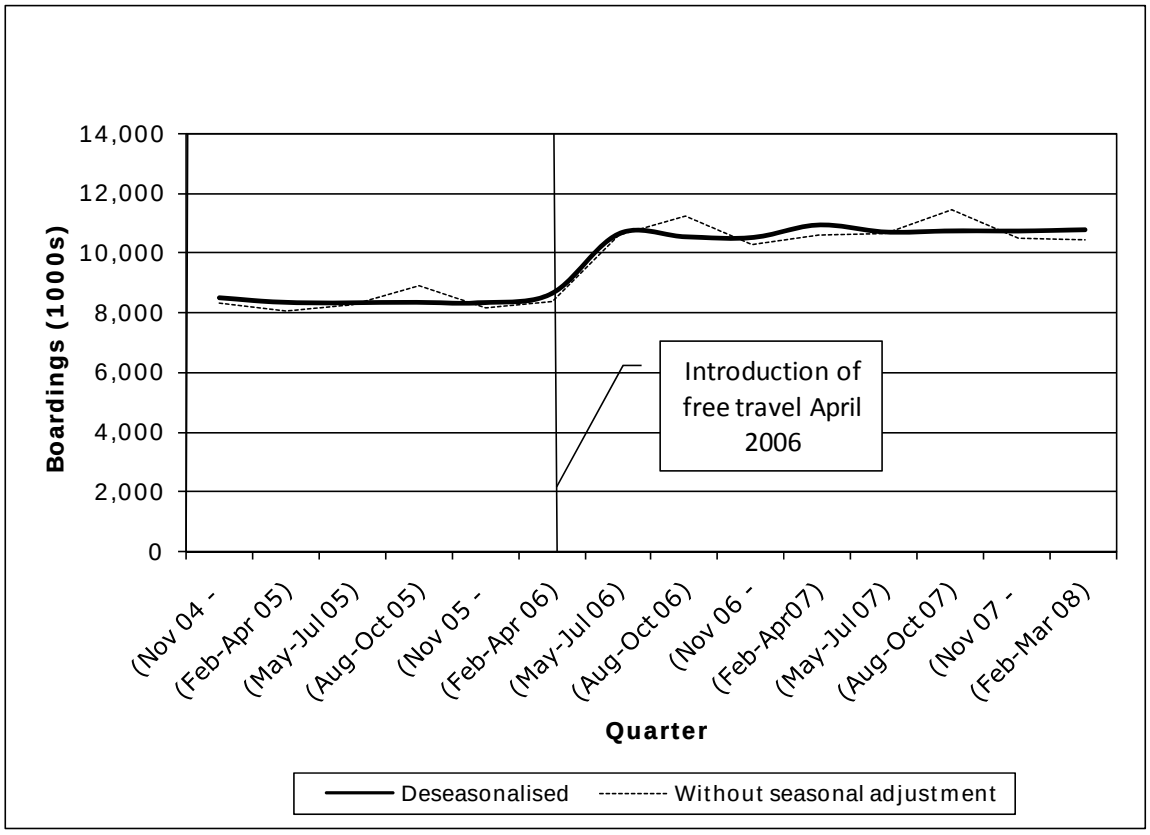

Figure 2 Concessionary Travel Trends in Greater Manchester

This confirms the impression from the annual data that in Manchester, the introduction of free travel had a large immediate impact, but with medium and (by implication, longer term) effects on travel patterns relatively muted. In contrasting Tyne and Wear and Greater Manchester, it is significant that the overall change is much closer after two years (29.0% compared with 31.1%) than it was after only one year (27.0% compared with 23.6%). However, the range across all four PTEs was wider for the two year cumulative change (5.2%) than in the first year, when it was 3.6%.

TREATMENT OF NEW PASSHOLDERS

A number of factors need to be taken into account in deriving elasticity values from these figures, with significant uncertainties created by the impact of changing passholder numbers, and underlying trends. The *pteg* report on "Recent Evidence on Bus Fare Elasticities for Older and Disabled Passengers (*pteg*, November 2007) set out the approach used by PTEs to derive the £first year" elasticity values that form the basis of current formal PTE reimbursement arrangements.

Similar (and potentially more contentious) issues arise in applying these principles to the second year of data following the introduction of free travel. One of the greatest difficulties concerns the treatment of "new" passholders where there are both practical and theoretical challenges.

The practical difficulty is that passholder numbers are not consistently defined in 2007-8 because of the preparations being made for the National concession introduced in April 2008. Practice has varied between PTEs, which (quite correctly) have given their highest priority to efficiently administering the issue of the new National pass. The consequence of the need to "clean" passholder databases so as to ensure the correct issue of National passes, coupled with changed procedures for issuing and validating them, is that time series data on the total number of passes issued will probably not provide like-for-like comparisons. Indeed, this highlights the difficulty of using comparisons of trip rates per passholder between years for calculating elasticities from the introduction of free fares, because such figures will be highly sensitive to the numbers of passholders assumed.

In any case, it is not evident exactly how the "new passholder" concept, as applied to interpretation of 2006-7 data, should relate to similar analysis of 2007-8 data. Even if accurate data on the number of passes on issue throughout the year was available, it would inevitably be coloured by applications stimulated by the National concession, rather than by the improved concessionary benefit provided by statutory free travel introduced in April 2006. The picture at the end of 2007-08 is likely to have been particularly distorted by the impact of the national campaign promoted by DfT encouraging eligible residents to apply for their new national passes. The DfT's own attitudinal survey indicates the success achieved in raising awareness within the target group, and it is quite likely that this led to increased take-up of local passes ahead of the issue of the national pass late in March 2008.

In the 2006-7 analysis, trips associated with "new" passholders (that is, who were eligible for the pass but would not have applied under the previous non-free concession) were taken out of the elasticity analysis. This allowed elasticities to be calculated from the increased trip making by old passholders, or passholders who would have applied for a pass even if the concession had not been improved.

Consequently, the approach adopted here is to assume the same adjustments for new passholders in 2007-8 as were calculated in 2006-7, in effect assuming that the same proportion of trips in 2007-8 can be associated with “new” passholders as in 2006-7. This is probably a conservative assumption, and understates the trip growth generated from "old” passholders, since it seems unlikely that a significant number of eligible residents would delay applications for a pass by more than a year after free travel was initially introduced if that was the principal reason why they were applying.

Other Adjustments

Prior to April 2006, a consistent decline in concessionary trips was evident in PTE areas, even after allowance has been made for influences such as increased concessionary fares, demographic trends and increased car availability. It is not unreasonable to assume that this would have continued had free travel not been introduced. However, demographic change also needs to be taken into account, since gradual increases in the older population (i.e. those aged 60 or more) peak in 2007 and continue at a similar level into 2008.

In the previous elasticity calculations (from 2006-7 data), demographic change was implicit in changes in passholder numbers, and explicit allowance was made for the underlying trend. Similarly, in the 2007-8 elasticity analysis, we have allowed explicitly for the underlying trend, assuming that had free travel not been introduced, the trend decline would have continued. We have also assumed that growth in the elderly population would have increased concessionary trips, even if free travel had not been introduced, on a *pro-rata* basis[2]. Estimates of the population of those aged 60 or over have been taken from the ONS mid-2006 population estimates for each PTE area, interpolated to give an average figure for the relevant financial year.

2007-8 Elasticity Estimates

The results are summarised in Table 2. Note that the “elasticity” values referred to here, and throughout this note, should more precisely be defined as the proportional elasticity constant, representing the point fare elasticity at a fare of £1 measured at April 2006 prices.

[2] Since this will not be reflected in the way in which new passholders have been dealt with in the 2007-8 analysis.

	GMPTE	Nexus	SYPTE	Metro	All Four PTEs
1st year increase in trips	27.6%	24.2%	23.0%	24.1%	24.2%
2006-7 Adjustments	*-1.6%*	*-1.2%*	*-0.1%*	*-2.1%*	*-0.9%*
Average concessionary fare paid in 2005-6	*£0.460*	*£0.412*	*£0.381*	*£0.343*	*£0.398*
1st year elasticity, as reported in November 2007 *pteg* research	-0.495	-0.496	-0.540	-0.569	-0.523
Cumulative increase in trips after 2nd year relative to 2005-6	29.3%	31.8%	32.6%	27.4%	29.4%
Historic trend	*-1.0%*	*-1.0%*	*-2.5%*	*-2.3%*	*-1.7%*
Change in eligible population	*1.9%*	*1.6%*	*2.0%*	*2.3%*	*2.0%*
Assumed 2007-8 change in trips attributable to free fares	*28.3%*	*30.9%*	*31.7%*	*24.7%*	*28.6%*
Implied 2nd year elasticity	-0.542	-0.654	-0.722	-0.644	-0.633
Increase in elasticity	9.4%	31.8%	33.7%	13.1%	20.9%

Table 2 Estimate of impact of 2nd year increase in trips on elasticity values

As would be expected, the lower increases in trips are associated with relatively modest increases in elasticity, as in Greater Manchester where on the basis of these calculations, the second year increase in elasticity is 9.4%. At the other extreme, taken at face value the South Yorkshire figures suggest that the elasticity in 2007-8 is 34% higher than in the first year. If an elasticity is calculated from the combined data for all four PTEs the second year increment is just under 21%.

These elasticity values need to be treated with caution. The calculations are extremely sensitive to the assumed growth in trips, creating scope for wide debate about detailed assumptions concerning new passholders and trends. For example, if alternative assumptions led to the assumed net impact of free fares in 2007-8 being more or less by only 2%, then the resulting 2007-8 elasticities for the combined PTE data set would vary between -0.582 (an 11% increase over 2006-7) and -0.682 (a 30% increase over 2006-7).

Overall, the data does seem to support the proposition that elasticities have increased with the passage of time since free fares were introduced. But it is evident that there is less consistency across the PTEs with regard to the scale of the cumulative second year impact. Whereas first year elasticities varied around the four-PTE average by -5.4% to +8.8%, the second year elasticities vary by -14.4% to +14.1%. Although a variety of hypotheses could be put forward to explain this variation, the reasons for it are not evident.

COMMENTARY

On the basis of these preliminary results, the increase in elasticity for 2007-8 calculated from the data of all four PTEs combined (20%) is close to that recommended by DfT in its December 2007 Guidance (25%). DfT guidance for year 3 and beyond is that elasticities will increase further, to 38%, 44% and 50% higher than the first year value in years 3, 4 and 5 respectively. Whereas trip growth in South Yorkshire, and Tyne and Wear supports elasticity increments which are greater than those recommended by DfT, the trip growth in West Yorkshire and Greater Manchester supports elasticity increments that are much less.

The apparent difference between areas may be as much to do with how quickly the market responded in Year 1, with a rise experienced during that year being a factor in at least some areas, than it has to be do with the difference between the position at the ends of years 1 and 2. Given this variation, it may be appropriate for all PTE areas to adopt an average PTE figure. If this approach is adopted, the analysis provides good support for the DfT default assumptions. In the absence of robust local data from elsewhere, there is little to indicate that the DfT guidance should be modified for years 3, 4 and 5 of the National scheme.

This note has dealt exclusively with data from the PTE areas. There are anecdotal reports of strong second year growth in concessionary trips in non-PTE areas, with increases in trip numbers also accompanied by substantial extension of trip length. Although non-PTE data on trips is often less robust than that that from the PTE areas (because it is usually obtained exclusively from operator ETM records), there would be benefits from being able to draw on wider experience.

Because of the National concession introduced in April 2008, data from 2008-9 and beyond is unlikely to provide unambiguous further evidence on elasticities derived from the April 2006 change to free travel. However, it seems that increases in concessionary trips arising from the National concession implemented in 2008 are somewhat greater overall than expected, and very much larger for individual TCAs in some areas. It is therefore important that best attempts are made to establish consistent data sets that can be used for further analysis, however challenging this might be. A key requirement is that data should allow, as far as possible, growth in trips arising from the improved concession to be distinguished from changes in trip numbers associated with reallocation of reimbursement responsibilities between TCAs.

Andrew Last
Minnerva Ltd
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