

Estimating the price sensitivity of long distance coach passengers in Scotland

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Abstract

1. This paper describes a method used to estimate own price demand elasticities for different types of passenger on the long distance coach network in Scotland. It was deployed in 2006 during an inquiry by the Competition Commission into the effect of a joint venture between two transport businesses, Stagecoach Group and Braddell plc.
2. The existing sources of evidence available to the inquiry included (somewhat dated) information about the price sensitivity of coach passengers in general, but little relating specifically to Scotland. Steps were therefore taken to design, test and implement a passenger survey, in partnership with market research agency Synovate. The survey results indicate lower absolute passenger own price elasticities than those reported in previous academic reviews, and this paper suggests some possible interpretations of this.
3. The results contributed to the Competition Commission's finding that other modes of transport did not constrain coach fares sufficiently to avoid a lessening of competition on some routes as a result of the joint venture. The paper concludes with some brief comments on the limitations of the survey methodology and the importance of local market features in determining own price demand elasticities for transport services.

Introduction

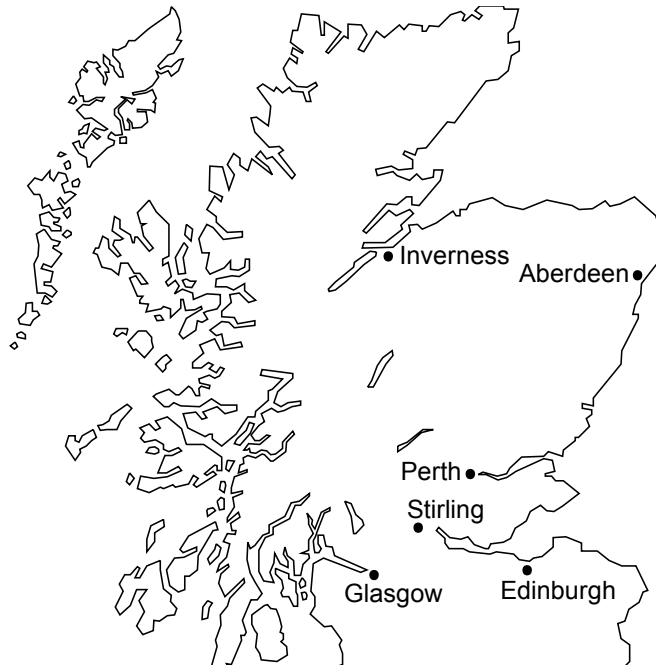
4. The research described in this paper arose from an inquiry into a joint venture between two coach operators in Scotland. In this section, the joint venture is described, along with the role of the Competition Commission (CC) in regulating it.

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The Scottish Citylink joint venture

5. The major cities in Scotland (see Figure 1) are all linked by coach and train services. Frequent commuter services run between Glasgow and Edinburgh, and long distance routes to Inverness and Aberdeen form a cross centred on Perth, often referred to as "the Saltire Cross", named after the design on the flag of Scotland.

Figure 1: Major cities in Scotland



6. The coach service provided by the public sector Scottish Bus Group was privatised in 1990 and renamed Scottish Citylink. It was subsequently bought by international transport business National Express Group in 1993. It was also in this year that the Railways Act in the UK was enacted, privatising the provision of passenger services by franchising them out to train operating companies for fixed terms. Competition concerns arose in March 1997 when National Express Group won the franchise to operate rail services in Scotland alongside its existing coach services. The Monopolies and Mergers Commission (MMC, the predecessor to the CC) noted that "... we believe that there is an element of competition between coach and rail services, principally for leisure passengers ..." and required National Express Group to divest Scottish Citylink as a condition of taking up the rail franchise.¹

¹ NEG Plc and ScotRail Railways Limited: a report on the merger situation, Monopolies and Mergers Commission, 1997. Summary, p1.

7. Scottish Citylink was ultimately purchased by Braddell plc, a subsidiary of the Comfort DelGro Corporation, an international road and rail transport company. A traditional long distance coach business model was operated, with published fare schedules, the option either to buy tickets in advance or to pay "walk up" fares, and direct, city-to-city journey timetables. The business faced competition on the Glasgow to Edinburgh commuter route from a private coach service called Motorvator, and from several specialist providers on the Saltire Cross routes.²
8. Competition in long distance coach services intensified in August 2003, when the Stagecoach Group introduced its "megabus" service to Scotland. Stagecoach Group operated a business model that was closer to that of a budget airline than a traditional coach operator. Yield-managed fares were offered on the megabus service, with a small number of seats offered well in advance of the journey at a headline price of £1, most seats at somewhat higher fares and all fares generally increasing as the date of travel approached. Early internet booking secured the lowest available seat prices and coaches travelled a "hub-and-spoke" route plan centred on Perth, requiring the long distance passengers to change coach but thus maximising the use of vehicle capacity. Stagecoach Group also bought and operated the Glasgow to Edinburgh route Motorvator service.
9. Scottish Citylink reduced ticket prices to protect its passenger volumes, and a significant expansion of the market for coach travel ensued. Overall passenger numbers increased, with survey evidence suggesting that many of the new passengers were using the coach instead of their cars. Scottish Citylink and megabus or Motorvator services overlapped on all of the main inter-city routes. Then, in September 2005, Braddell and Stagecoach Group announced the completion of a joint venture, to operate a unified coach service under the Scottish Citylink brand and Stagecoach Group operational management.
10. The parties to the joint venture stated that its aims were, firstly, to create a coach service that was able to compete effectively with the rail service and increasing private car use in Scotland and, secondly, to reduce loss-making over-supply in the market.

² The distance from Glasgow to Edinburgh by motorway is about 46 miles (74 kilometres). The distance along the Saltire Cross route to Aberdeen is about three times this.

The competition investigation and regulation

11. In the UK, there is a two phase merger control system of regulation. The Phase One regulator is the Office of Fair Trading (OFT), that has between four and eight weeks to review mergers that are notified to it by the merging parties or identified as raising competition concerns. The CC is the Phase Two regulator, which (amongst other things) carries out in-depth investigations into a small number of potentially problematic mergers that are referred to it by the OFT or other sector regulators. The Scottish Citylink joint venture was referred to the CC in March 2006.
12. The report of the CC inquiry was published in October 2006.³ Regarding the Glasgow to Edinburgh commuter route, the report concluded that, if the joint venture had not been created, it was unlikely that Stagecoach Group would have continued to compete with Braddell on this route and so the joint venture had not resulted in a lessening of competition. On the Saltire Cross routes, however, the joint venture had resulted in a substantial lessening of competition in coach services and the competitive constraints from rail and private car on coach fares were weak.
13. Stagecoach Group and Braddell were required to divest the business of one of the parties on the Saltire Cross routes, in order to maintain some competition in the provision of long distance coach services. At the time of writing this paper, negotiations to contract with a suitable purchaser were still in progress.
14. A summary time line for the creation of the Scottish Citylink joint venture and the regulatory inquiry that required it to divest some of its services is presented in Table 1.

³ Stagecoach and Scottish Citylink. A report on the completed joint venture between Stagecoach Bus Holdings Limited and Braddell Plc in relation to megabus.com, Motorvator and Scottish Citylink, Competition Commission, 2006.

Table 1: Timeline - the creation and investigation of the joint venture

<i>Date</i>	<i>Event</i>
Mar 1997	National Express wins rail franchise in Scotland
Sep 1997	National Express required to divest Scottish Citylink coach service by MMC
Aug 2003	Stagecoach Group introduces megabus service in Scotland
Sep 2004	megabus services extended to Inverness and Aberdeen
Sep 2004	Motorvator Glasgow-Edinburgh service acquired by Stagecoach Group
Sep 2005	Stagecoach - Braddell Scottish Citylink joint venture completed
Mar 2006	Joint venture referred to CC by OFT
Oct 2006	CC inquiry finds substantial lessening of competition on Saltire Cross routes

Source: Evidence presented to the CC Scottish Citylink joint venture inquiry

15. During the inquiry, the parties to the joint venture highlighted the fact that the MMC had concluded in 1997 that there was an element of competition between rail and coach services in Scotland, but that the CC had identified weak competitive constraints on coach fares. The CC finding was based upon a range of evidence, including the results of a passenger survey designed to identify the price sensitivity of coach passengers to an increase in fares in 2006. The remainder of this paper describes this survey, and how its results affected the outcome of the inquiry.

The survey research objectives

16. The survey research had a range of objectives to inform the inquiry about different facets of passenger behaviour and attitudes. In particular, the inquiry team needed to assess the ability and incentive of the joint venture to raise fares profitably, and the research aim of specific interest in this paper was to estimate own price demand elasticities and diversion ratios for different passenger groups.
17. The own price demand elasticity for coach travel measures the percentage change in the number of passengers using the coach service in response to a percentage increase in coach fares. For example, if a five percent fare increase caused ten percent of the passengers to cease using the coach, this would imply an own price elasticity of -2 (minus two), a highly "elastic" response. The more negative the own price elasticity, the less likely that a fare increase would be profitable for the coach operator.

18. The diversion ratio is the proportion of those passengers ceasing to use the coach following a fare increase that would switch to each of the available alternatives. For example, the diversion ratio for train might be 0.8 and that for "not travelling" might be 0.2, implying that 80% of the passengers lost from the coach service would switch to the train and 20% of them would decide not to travel. The simple example presented here (own price demand elasticity -2, diversion ratio to train 0.8) would imply that coach fares were strongly constrained by the train service.
19. The joint-venture parties argued that they had limited ability to raise coach fares profitably, due to the competitive constraints imposed by the train and private car in Scotland.⁴ Ideally, the issue of competitive constraint would have been addressed using econometric analysis of price and passenger number information over time, but ticket price data was not available for this purpose, as the parties' information systems recorded average revenue, rather than ticket price, information. It was therefore decided to undertake a passenger survey that included hypothetical questions about price sensitivity and switching intentions.

An overview of the previous research available

20. Prior to the CC inquiry, there had been few UK studies of coach fare elasticities and none of those identified related specifically to Scotland. This was significant, as initial arguments from the joint venture parties noted that factors such as the extent of car ownership, average distances between city centres and patterns of urban and rural traffic congestion were different in Scotland to those in other countries or parts of the UK.
21. Professor Mark Wardman of the Institute for Transport Studies (ITS) at the University of Leeds had carried out literature reviews as part of previous transport inquiries. An extract from the review he carried out as part of the CC National Express / Thameslink train franchise inquiry in October 2005 is presented in Table 2.

⁴ They also argued that they had no incentive to do so, but considering this is beyond the scope of this paper.

Table 2: Review of coach fare elasticity estimates

<i>Study</i> ⁵	<i>Transport context</i>	<i>Coach fare elasticity</i>
Douglas 1987	UK inter-urban coach flows	-1.10
HFA 1990	UK inter-urban travel	-1.20
Oscar Faber TPA 1992	Transpennine (Northern England) leisure trips	-0.21
Oscar Faber TPA 1993	Cross Forth (Scotland) journeys, mainly commuting	-0.45
Toner & Wardman 1993	Leisure travel in South-East UK	-0.37

Source: Review of rail and coach elasticities by Professor Mark Wardman, October 2005

22. Professor Wardman noted in his review report that the two Oscar Faber TPA studies and the Toner & Wardman study in Table 2 estimated elasticities in respect of switching between transport modes only, neglecting the effects of fare increases causing some passengers to choose not to travel or, conversely, fare decreases causing new passengers to decide to travel. He therefore suggested that a general coach fare elasticity estimate of -1.1 seemed reasonable.
23. This general estimate has been used in other recent transport projects. For instance, a report for the UK Government Office for the South East and the South East Regional Assembly by transport consultancy Atkins in 2003 gave a broad estimate of -1.0. The current issue of the Transport Research Laboratory "Black Book" (report TRL593, 2004), widely used in the UK for transport planning, has a meta-analysis of published estimates and gives an average for long run bus fare elasticity estimates of -1.01.
24. In summary, previous research had suggested a general UK own price demand elasticity for coach travel of about minus one. Studies noted, however, that estimates were sensitive to regional factors, to the purpose of the journeys being undertaken and to assumptions about the options available to passengers to choose whether to travel or not. The aim of the Scottish Citylink inquiry passenger survey was to gather primary price sensitivity and diversion option information that was specific to the circumstances of the coach joint venture in Scotland.

⁵ Full citations to all of the studies are included in the References section of this paper.

The design of the passenger survey

Background

25. To estimate the price sensitivity of a given population of passengers using a survey is difficult. The CC has experimented with a variety of different survey design approaches, since first deploying primary customer surveys as part of its evidence gathering for merger control in 2002.⁶ Some of the problems encountered have been:
- questions about future intentions ("stated preference" questions) have been generally regarded by economists as less valid and less reliable than questions about past behaviours ("revealed preference" questions);
 - if passengers believe or guess that certain question responses may signal indifference to future increases in fares, they may resist giving these responses;
 - the effects of fare increases of between 5 and 10 per cent are of interest for competition assessment purposes, but not all passengers are numerate enough to calculate percentages of ticket prices, nor are they confident thinking about their likely responses to small percentage changes;
 - passengers find it difficult to record ticket prices, types and validities accurately (for example, £5.50 for a return ticket valid today only) on self-completion questionnaires.

Survey design

26. For the Scottish Citylink joint venture inquiry, the CC commissioned market research agency Synovate to implement a two-phase passenger survey. A wide range of questions about passenger behaviours and attitudes was asked at each stage but, in this paper, I describe only those that are relevant to establishing transport mode options and price sensitivity.
27. In phase one, field staff travelled on a representative sample of the joint venture coach journeys over a period of three weeks during April 2006. They sought to interview all passengers who had bought their own tickets (excluding travellers whose tickets had been purchased for them), to gather information about their journeys and ticket details and to recruit regular travellers for a follow-up telephone survey.

⁶ For general reviews of the use of surveys in merger control, see Hughes and Beale (2005) and Reynolds and Walters (forthcoming).

28. In phase two, a computer assisted telephone interview (CATI) methodology was used to contact the regular travellers recruited in phase one and ask them about their transport mode options and likely responses to coach fare increases. Each respondent was first asked to identify a long-term diversion option against the contingency that they were not able to travel on the joint venture coach service. He or she was then asked a series of questions to identify the reserve price at which they would switch to this chosen diversion option (if at all). This approach had the advantages of allowing all respondents to reveal their diversion option (not just those indicating they would switch in response to a fare increase) and putting the stated intention question in a realistic alternative mode context.⁷
29. To identify their primary diversion choices, respondents were first asked about the full range of transport modes they had used to travel between the towns on their coach journey during the previous two years. They were then asked about other modal options that they were aware of, but had not themselves used. To this combined list of "known" options were added "Do not travel" and "Travel to a different destination" to create a customised scale, from which each respondent selected a diversion choice in response to the question "Imagine Scottish Citylink and megabus coach services stop running. Completely and permanently. What would you be most likely to do?".
30. The size of the price increase that would cause the passenger to switch from the coach to their primary diversion choice was then probed, using a "bracketing" technique based on the actual price they had paid for their recent journey ticket. The fare values to be tested were presented by the CATI software, so no percentage calculations were required of the respondent or the interviewer.
31. Fare increase ranges from "less than 1 per cent" to "more than 50 per cent" were tested with each respondent. The bracketing approach is illustrated in a dialogue between an interviewer and a respondent in Figure 2. The respondent had been recruited on a Scottish Citylink coach journey, had shown the recruiter an £8.00 single ticket, and had indicated earlier in the telephone interview that, if the coach service had not been available they would have used a private car instead.

⁷ The survey analysis checked that the diversion options for switching passengers (the "marginal customers") were not significantly different from those for the other passengers.

Figure 2: Example fare increase testing dialogue

Interviewer: *Would you have used a private car instead of travelling by Scottish Citylink coach, if the price of the coach ticket had been £12.00 ?*

Respondent: *Yes, definitely.*

Interviewer: *And would you have used a private car if the price of the coach ticket had been £8.08 ?*

Respondent: *No, I would have taken the coach at that price.*

Interviewer: *And would you have used a private car if the price of the coach ticket had been £10.40 ?*

Respondent: *No, I would still have gone by coach.*

The fare that would cause this respondent to switch to using a private car is thus between £10.40 and £12.00, *i.e.* a fare increase of between 30% and 50% on the £8.00 ticket.

32. This section of the interview concluded by establishing what proportion of their journeys the respondent would switch to the chosen diversion option at the negotiated reserve fare level, to allow respondents to indicate that they would switch only some of their regular journeys, rather than all.

The collection of survey data

33. The fairly complex scripting logic is deliverable only by using computer assisted interviewing technology. The option of using a hand-held computer on the coach or at the pick-up point was also investigated, but was neither practicable nor cost effective. There was little opportunity to intercept passengers at the coach pick-up and set-down points, and health and safety considerations required field staff on moving coaches only to conduct interviews when there was a spare seat beside or behind the respondent. This may have introduced a selection bias against passengers travelling on the more crowded Glasgow to Edinburgh commuter routes, but there were no field reports of problems on other parts of the network.

34. Interviewing quotas were set by coach route, day of the week and time of day, to ensure that a representative sample of the travelling public was surveyed. Prior research suggested that diversion options and price sensitivity would also vary according to the purpose of the journey being undertaken. For instance, a business person travelling to a sales presentation was likely to be less price sensitive than a large family on a day trip during half-term. Establishing clearly the purpose of each passenger's journey was, therefore, an important element of the on-coach interview and all fieldwork monitoring and results analysis was done separately for three broad journey purpose classes:
- a) to / from work;
 - b) to / from education;
 - c) leisure and personal business travel.⁸
35. The numbers of the on-coach interviews conducted in phase one and the telephone interviews conducted in phase two are summarised in Table 3.

Table 3: Number of interviews completed

<i>Journey purpose</i>	<i>On-coach interviews (proportion by purpose)</i>	<i>Telephone interviews (proportion by purpose)</i>
To / from work	267 (7%)	48 (14%)
To / from education	441 (11%)	59 (17%)
Leisure / personal business	3,192 (82%)	244 (69%)
Total	3,900 (100%)	351 (100%)

Source: Analysis of survey data provided to CC by Synovate

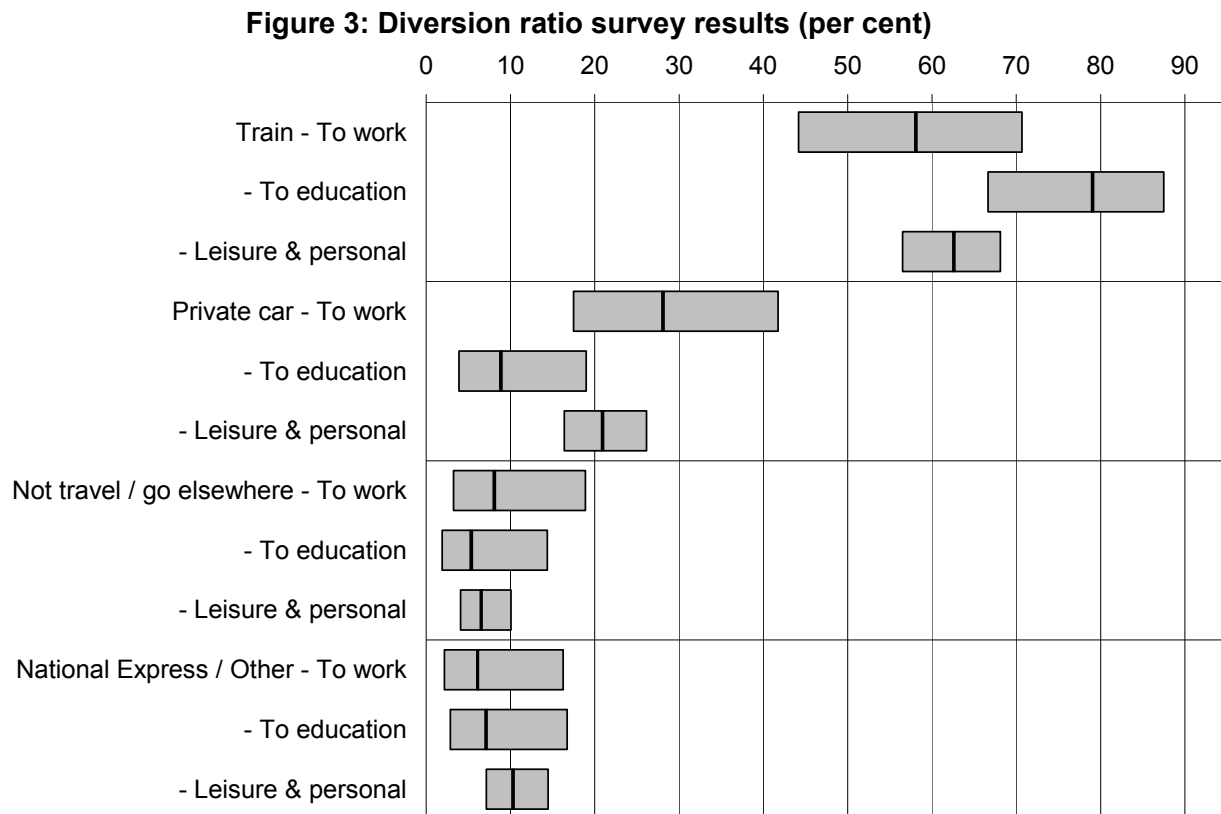
36. Passengers travelling to / from work and to / from education are more strongly represented in the telephone survey than in the on-coach survey. It was speculated that this was because their travel patterns made it easier for them to be reached on the contact telephone number they gave for the follow-up interview. The on-coach and telephone interview proportions were broadly the same by coach route, travel frequency, ticket price and passenger age. Overall, the telephone interview sample was regarded as representative of the regular travellers on the coach network in April, but only *within* each of the journey purpose categories.

⁸ The to / from work category includes daily commuters, but is by no means limited to them. The on-coach survey research found that proportions of those coach passengers in Scotland travelling for work purposes did so weekly, monthly or even less frequently.

Data analysis and research results

Diversion option results

37. The proportions of passengers who chose each of the main transport mode diversion options are reported by journey purpose in Figure 3. The results are based upon all of the respondents who answered the diversion ratio questions.



*Based on 48 travelling to work, 59 to education, 203 leisure & personal business passengers
 Bars represent lower and upper bounds of 95% credible intervals
 Source: Analysis of survey data provided to CC by Synovate*

38. The top group of three bars in Figure 3 describes the percentages of respondents who would switch to the train; the next group the private car (as either the driver or a passenger); the next group those who would not travel or would travel to a different destination; and the final group those who would switch to a National Express coach, a bus, or some other mode of transport.

39. Each dark vertical line represents the percentage of the respondents who chose a particular diversion option in the survey, the grey bars on either side of this represent a 95% credible interval for the percentage in the whole population travelling with that journey purpose.⁹ The width of the bar is a measure of the uncertainty in the estimate due to sampling.
40. The results tend, in general, to support the views that the joint venture parties put regarding alternative modes during the inquiry. The train is, by far, the most commonly-chosen alternative to the coach, especially for students. The private car is the second most frequently-chosen option for people travelling to work, for leisure or on personal business - but this pattern is not statistically significant for the student group. The options to change travel plans or use other transport modes are least commonly chosen, and the differences between the proportions choosing them are too small to be statistically significant.

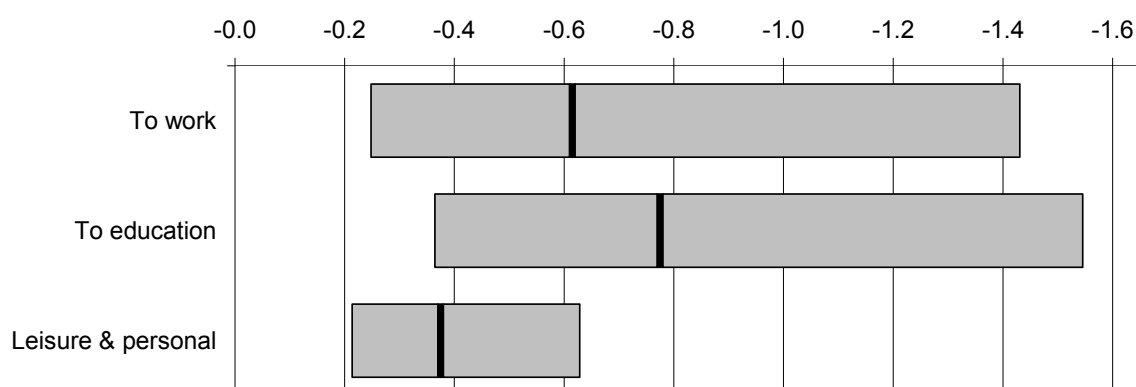
Price sensitivity results

41. For each respondent, a percentage price increase at which they stated they would switch to their chosen primary diversion option was established, as described in paragraph 31. Own price demand elasticities for coach travel were then calculated for each journey purpose group, based upon a 10 per cent fare increase.¹⁰ The results are shown in Figure 4.

⁹ This was estimated using a Bayesian beta / binomial conjugate analysis and may be regarded as the equivalent of a 95% confidence interval. The use of a Bayesian technique is necessary here, as usual market research calculations based on the Central Limit Theorem are not applicable for small proportions (containing less than five respondents). The credible intervals for small proportions are not constrained to be symmetric.

¹⁰ 10 per cent was specified by the CC inquiry staff as the increase for which questions of the joint venture's ability and incentive to raise fares profitably were of interest.

Figure 4: Own price demand elasticities for coach travel



Based on 48 travelling to work, 59 to education, 203 leisure & personal business passengers

Bars represent lower and upper bounds of 95% credible intervals

Source: Analysis of survey data provided to CC by Synovate

42. The dark vertical lines and grey bars in Figure 4 represent the calculated own price demand elasticities from the survey and 95% credible intervals for these, in the same way as described around Figure 3.
43. It is clear from the extent of the credible intervals in Figure 4 that the survey does not provide statistically significant evidence of differences in price sensitivity based on journey purpose. Moreover, because students tend to buy cheaper tickets (booking online, well in advance) and leisure travellers tend to buy more expensive tickets (longer journeys), if the data is weighted by ticket price the differences in price sensitivity between the groups disappear almost entirely.
44. The CC inquiry therefore focused on the price sensitivity of the leisure and personal business passenger group, because this represented the majority of the travelling public.¹¹ The 95% credible interval for the own price demand elasticity for this group was (-0.2, -0.6), and this lies well above the previous estimate for coach services from the literature of -1.0. This suggested that coach passengers in Scotland in 2006 were *significantly less price sensitive* than passengers from other parts of the UK investigated in previous transport studies.

¹¹ As no reliable population figures for the proportions of the travelling public by journey purpose were available, it was decided not to combine the three respondent groups to calculate a single elasticity estimate. This would have given an unwarranted impression of precision, whilst introducing an unknown selection bias.

The implications of the research results for the inquiry

45. The CC accountancy team took the credible interval for coach service own price demand elasticity estimated from the survey results, together with a range of other evidence, and used this in spreadsheet models to assess the profit incentives of the joint venture to raise fares. Sensitivity testing of the models was carried out across a range of elasticities between -0.2 and -0.6 (and also down to -1.1, for comparison purposes). At almost all of these elasticity levels, the models indicated that there was an ability to raise fares profitably on the main network routes.
46. These findings were a significant part of the evidence base that allowed the CC to establish that a substantial lessening of competition had resulted from the joint venture on the Saltire Cross routes and to bring forward the remedies described in paragraph 13.

Concluding comments

47. The use of customer survey evidence in economic analysis is sometimes contentious. In this final section of the paper, a possible interpretation of the differences between the results of this research and previous work is offered, some limitations of the survey are discussed, and the importance of local market conditions in determining competitive effects is stressed.

Comparison with previous work

48. As noted in the introduction to this paper, an MMC inquiry into the franchising of rail services in Scotland in 1997 found that coach and rail services competed with each other, especially for leisure passengers. The CC inquiry in 2006 found that this competition was not sufficiently strong to constrain the ability of the Scottish Citylink coach joint venture to raise fares.

49. One might speculate that this change in the competitive environment arose partly due to a decrease in the general level of coach fares during the period of pre-joint venture competition between Braddell and Stagecoach Group after the latter entered the market in August 2003. The CC found evidence of a decrease in average revenue per Scottish Citylink passenger on most routes following the Stagecoach Group entry.¹² The research described in this paper was therefore testing demand elasticities from a lower price point than would have been observed prior to the entry of Stagecoach Group.

Limitations of the survey methodology

50. The survey methodology described depends upon the ability of passengers to give accurate information about their likely behaviour in response to hypothetical situations. This ability is difficult to assess objectively. A relatively high proportion of the telephone interviews were monitored by both Synovate and CC professional staff in the early part of the programme, and there was no indication that respondents found the hypothetical situations described, and the questions asked about them, difficult to understand or respond to.
51. Another potential concern for any survey sampling method is the degree to which the sample interviewed is representative of the whole population. In this research, the population of interest was defined to be that of "regular travellers by coach" on each of the routes investigated, specifically those passengers who stated that they travelled by coach on that route monthly or more frequently. It was felt that questions about switching to alternative transport modes were meaningful only for this group. This filter screened out a high proportion of passengers on the longer routes to Inverness (64 per cent) and to Aberdeen (57 per cent), and a high proportion of passengers travelling for leisure or personal business (60 per cent).

¹² Stagecoach and Scottish Citylink. A report on the completed joint venture between Stagecoach Bus Holdings Limited and Braddell Plc in relation to megabus.com, Motorvator and Scottish Citylink, Competition Commission, 2006, p62, paragraph 6.64.

52. The difficulty of interviewers working on the most crowded coaches has already been noted. The fieldwork was carried out over three weeks in April, including the Easter Bank Holiday weekend. It would be difficult to contend that this period is wholly typical of the entire year, but it did have the virtue of covering a mixture of school term and holiday times. The statutory timetable under which the CC investigates merger references allows almost no flexibility in the fieldwork period available for primary data collection.
53. Other, more subtle, concerns about possible sources of selection bias in the survey methodology were considered. Market research agency Synovate agreed that the CC should be revealed as the sponsor of the research at the start of both on-coach recruitment and telephone follow-up interviews, to maximise cooperation rates, but it was not clear how, if at all, this might introduce a selection bias beyond that in any voluntary survey.

Influence of local market conditions

54. The fact that coach demand elasticities were found to be significantly lower (in absolute terms) in Scotland than those previously reported for other regions highlights the dangers for economists, regulators and transport planners in depending upon either generalised UK elasticity estimates or those researched in the 1990s. Interestingly, Wardman (2007) and his co-workers have recently estimated a lower overall train demand elasticity for Scotland than for the rest of the UK, though they note that there is considerable variation across routes.¹³
55. Using primary survey data collected from the transport network of specific interest in the CC inquiry, with all of the practical difficulties and methodological limitations inherent in this approach, provided important evidence for understanding competitive transport conditions in the local market, that would not have been available to the regulator otherwise.

¹³ Professor Wardman estimates a fare elasticity for inter-urban non-season rail tickets in Scotland of -0.8, against a general UK estimate of -1.0 in the Passenger Demand Forecasting Handbook (2005).

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¹⁴ An earlier version of this paper is available at www.competition-commission.org.uk/our_role/analysis/topics.htm entitled "The relevance of surveys to the relevant market" (January 2007).