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A Changing Environment – The Australian Regional Aviation Industry

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Abstract

Australia is a country highly dependent on its regional aviation services. The distances between population centres, and between markets, make regional airlines an essential transport service to remote communities. Due to the small markets that regional airlines serve, often a single operator provides all services to a community.

The industry is one that has undergone, and continues to undergo, change. The Federal government has progressively wound back its direct involvement in the Australian aviation industry in the last 20 years. Over the last decade regional aviation has undergone deregulation in most states. These institutional changes form a backdrop to the churn within the industry – both in terms of airlines and routes serviced.

The effects of the small nature of regional aviation markets as well as those of deregulation, and indeed continued regulation in some states, on the efficiency and effectiveness of the regional aviation sector in Australia is of interest to industry and government at all levels. This paper provides a snapshot of the regional aviation industry in Australia and an analysis of the competitiveness of the industry. The analysis includes an examination of the impact of exogenous and endogenous changes on competitiveness.

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Introduction

Australia is highly dependent on regional aviation services. These services link distant communities and markets allowing for the transportation of residents and visitors and providing access for goods and services to these markets. Regional aviation services can provide a vital lifeline to these communities. It is important that they operate effectively and efficiently. Efficient operation requires that a competitive price be charged.

Regional aviation has undergone deregulation in most states over the last decade. Over the 4 years to 1996-97 the number of people travelling by air within Australia has grown by over 4 million and passenger numbers on regional airlines have increased by close to 1.5 million (ABS, 1997). These forces will have influenced the way in which regional aviation services operate in Australia. Of particular interest are the combined effects they have had on the competitive nature of the industry. Higher demand and deregulated markets offer the opportunity for increased competition in regional air services in Australia. However, the total number of regional airlines has not grown over the last 6 years and a high proportion of regional routes still operate with a single service provider.

This paper focuses on measuring the competitiveness of regional airline services. To better understand the industry's competitiveness an overview of the current level of operations in the regional aviation industry in Australia and the regulatory environment in which they take place is provided. This shows the structure of the regional airline industry and the conduct of the airlines providing a background for the analysis of competitive performance. The main body of the paper presents an econometric analysis of the level of price competition in regional airline services. Information about non-price competition through the quality of the services offered is also included. More information on regional aviation as a whole, including regional airports, will be available in a BTE report on regional aviation to be published next year.

The regional aviation industry - a snapshot

The regional aviation industry is defined as encompassing the activities of all regional airlines (ie not Qantas Airways and Ansett Australia) and the non-capital city airports that they serve. Like the domestic operators regional airlines operate regular passenger transport (RPT) services within Australia. These services originate from and/or go to a regional airport. By this definition wholly owned subsidiaries of Qantas and Ansett, such as Airlink and Kendell are included as regional airlines.

The boundaries of regional aviation in Australia are hazy. For example routes such as Canberra-Sydney are operated by Qantas, Ansett, Eastern Australia Airlines and Kendell Airlines. Eastern Australia and Kendell are defined as regional airlines and hence Canberra-Sydney, normally considered to be a domestic or trunk route, is defined here as a regional route. At the other end of the scale it is possible for charter operators to compete with regional airlines on thin routes where it appears that only one airline provides a service.

Level of operation

Using the above definition it is possible to quantify the level of regional aviation operations in Australia. The following sections provide a snapshot for the 1997 calendar year, the most recent year for which comprehensive data are available.

Airlines: In 1992, when an Industry Commission report on intrastate aviation was released, there were 49 regional airlines operating in Australia. In 1997 46 airlines served regional routes, of which only 26 had been operating continuous RPT services since 1992.

There has been an increase in the concentration of ownership through takeovers and mergers in recent years. This trend is reinforced by the actions of the two domestic airlines, which have increased their ownership of regionals. At the end of 1997 Qantas fully owned 4 regional airlines and Ansett fully owned 3. Another 11 regional airlines had affiliations of some sort (through frequent flyer programs, sharing facilities or code sharing arrangements) with one or other of the domestic operators. Qantas and/or Ansett also directly offered services on some 66 regional routes.

Passengers and freight carried: In 1997 approximately 5.69 million passengers were carried by regional airlines in Australia. This represents 20.5 per cent of the total domestic market of approximately 22.3 million passengers. Also, an estimated 5,162 tonnes of freight and 1,728 tonnes of mail were carried by regional airlines in 1997.

The airline industry uses the distance flown by paying passengers and the capacity available as measures of operation. Revenue passenger kilometres (RPK) for regional airlines in 1997 were 1.7 billion and available seat kilometres (ASK) were 2.8 billion. These two statistics are used to derive the load factor, which indicates the proportion of available seats filled by fare paying passengers. The median load factor on regular regional services was found to be 51 per cent and a weighted average load factor was 55.6 per cent. This is significantly lower than the average load factor operated on the domestic network of 74.3 per cent in the 1996-97 financial year (ABS, 1997).

Aircraft types: In 1997 there were 286 aircraft used in regional RPT services. These ranged in size from 5 seat aircraft (Beechcraft, Cessna and Piper models) to 87 seat aircraft (BAe 146-300). Across the fleet the average capacity was approximately 20 seats. These aircraft fall into groups: those with 5 seats, 9 seats, 18-20 seats, 30-36 seats and a small number of larger turboprops and regional jets. Some of the smaller aircraft in the fleet are partially utilised for non-RPT services, such as charter operations, while the larger aircraft are more likely to be fully utilised for RPT services. The weighted average of 27 seats per trip better reflects the average size of aircraft operating regional services.

Airports served: There were 207 airports served (not including capital city airports) by regional airlines in 1997.

Routes: There were approximately 480 routes operated for at least part of the year in 1997.

Industry churn: A snapshot of the regional aviation industry is useful in the assessment of competition at a point in time. However, the level of churn gives an indication of the forces operating within the industry. Around half of the regional airlines operating in 1992 were still operating as the same airline in 1997. Of those airlines that were still operating a substantial number had varied the routes that they operate, the frequency of service on their routes, and/or changed their aircraft fleet.

Some of this change has been driven by factors internal to the airlines – such as financial pressures or management decisions. However, the changing regulatory environment in which airlines operate has had a significant impact on the structure and operations of the industry. This regulatory environment is examined below.

Domestic airline in regional aviation: Qantas and Ansett have a strong presence in the regional airline market. Although, in 1997, they operated services directly on only 15 per cent of regional routes, airlines with which they have an alliance of some form operated on 83 per cent of regional routes (80 per cent of routes were operated only by airlines associated with Qantas or Ansett). Just over half of the regional airlines had an alliance with one or other of the domestic airlines, yet these airlines carried 97 per cent of the regional passengers. The 21 non-aligned airlines carried only 3 per cent of regional traffic. It appears the duopoly structure of the domestic aviation market is strongly influencing the regional industry.

Regulation of the industry

The structure of the regional aviation industry and its competitiveness is greatly influenced by the institutional framework in which it operates. The Federal, state and local governments have the ability to control elements of these operating conditions through regulation.

Over the last two decades the Federal and state governments have progressively moved out of regional aviation. The deregulation of interstate aviation in 1979 saw the removal of price regulation, aircraft import restrictions, and capacity sharing arrangements on interstate routes. The Federal government has restricted its legislation and industry regulation to issues concerned with safety, regularity and efficiency, where regularity and efficiency matters are related to safety and navigational aspects (BTCE 1988). All other areas pertaining to regional aviation are the primary responsibility of state governments, while local governments have an important ownership role for regional airports.

New South Wales is the only state to maintain significant licensing of intrastate operators and regulation of the number of operators licensed on particular routes. In 1992 the NSW government announced that although entry to most routes would continue to be regulated, an additional operator would be allowed on some major routes. The deregulation of regional air services was proposed for 30 April 1999. In September 1998 an interim report was released by the Standing Committee on State Development which recommended that the NSW government defer the deregulation of regional air services until after the proposed date. This recommendation was accepted and regulation remains.

The Queensland Government aims to deregulate air services to the maximum extent possible. That is, deregulate to the point at which services cannot be operated profitably by the market or the market would provide an inadequate level of service. To this end eight routes to western Queensland are subsidised by the government, another two have jet aircraft requirements, and the remaining routes are not regulated.

South Australia and Victoria have both been effectively deregulated since 1979 when interstate aviation was deregulated. The Northern Territory deregulated all intrastate aviation in 1992 and now operates an 'open skies' policy where the level of service is determined by market forces. Western Australia deregulated jet routes in the early 1980s and non-jet routes in 1994. Tasmania has been the most recent state or territory to effectively deregulate air services (still to be confirmed by legislation) after the collapse of Airlines of Tasmania in 1997.

The differences in regulation of intrastate aviation allow for comparisons to be made of the impact of deregulation on ticket prices, the number of operators on routes of particular sizes and the level of service quality being offered.

Competition

Despite the variances in state and territory regulatory regimes and the broad range of operators and routes making up the Australian regional aviation industry there are some clear features of the industry.

Two thirds of the regional air routes are operated by only one airline. The high level of single operator routes leaves the regional aviation industry open to questions regarding its competitiveness. The question really is, is the appropriate airfare for a service being charged without the forces of directly competing airlines to keep them in check?

Theory explains how the forces of competition cause the appropriate price to be charged. In a perfectly competitive market marginal cost would be equal to marginal price. That is, the cost of providing a seat on an aircraft would be exactly equal to the price of the ticket. If marginal price is above the marginal cost of producing a service new entrants will move into the industry and be able to charge a lower price for the service and take passengers away from the existing operator. If marginal price is below marginal cost then operators will go out of business as they will not be able to continue to operate a loss making service in the long run. The entry or exit of operators will force a balance between marginal cost and marginal price. In a market where competition is restricted, without regulation of prices, operators will be able to charge a higher airfare than is needed to cover costs (which are defined to include an acceptable operating profit below which operators would not remain in business).

Does the existence of so many single operator routes mean regional airfares are higher than necessary? The answer to this question is — it depends. It may be that the level of demand will only support a single operator on the majority of regional aviation routes when a competitive price is charged for the service. On the other hand, it is also possible that competition is restricted somehow and regional airlines are able to charge airfares above the competitive price and maintain a monopoly. There are a number of assumptions in the above argument about the effects of competition and if any of them do not hold the market may not operate competitively. The most important, in this case, is that an airline is able to enter and exit from a particular route as they like. In reality this is not true. Start up costs in investing in terminal infrastructure, regulations (particularly in NSW) and attaining appropriate levels of aircraft utilisation across the

airline's network can all stop an airline freely entering a market. Similarly, significant sunk costs can stop an airline easily withdrawing from a market if they want to.

It is possible that factors such as entry and exit barriers are stopping the requirement for competitive pricing of regional aviation services. The simplest method to determine if a competitive airfare is being charged on regional aviation routes is to compare the marginal cost of providing the service with the marginal price paid for the service in a relational model. The following section looks at how this is done.

Modelling competition

A close relationship between marginal cost and marginal price would indicate that prices are being set competitively. However, the task is not so simple, as this information is not readily available.

The marginal cost is difficult to calculate. Adding an additional seat on a flight may not cost very much. However, at some point adding an extra seat will require a shift to a larger aircraft which will change the average cost of all seats on that flight. At a higher level of demand adding an additional seat may require the addition of an extra flight. Airlines also have fixed costs, such as ticket sales, marketing and head office expenses which are not easily attributed to an individual seat or even an individual flight. These factors make it difficult to calculate the marginal cost for airline seats.

Marginal price, represented by average price, appears easier to calculate than marginal cost as it is simply the airfare paid for a seat on the aircraft. Unfortunately this is not straightforward. Airlines offer a range of airfares. Generally airlines offer business-first class fares (rarely offered by regional airlines), full economy class fares and a range of discounted fares with conditions attached to the ticket. Airlines have sophisticated revenue management systems that calculate the average yield based on the range, and number, of discounts offered. This is effectively the average price of a seat on a particular route and this information is a closely guarded business secret. Route specific total revenue is also not publicly available, so average fares can not be calculated using the total revenue and dividing by the number of flights and the load factor.

The econometric model

The difficulty with determining marginal cost and marginal price for particular air services means that a different method for analysing competitive pricing is required. As in most existing studies of aviation competition, econometric models are used to relate available variables, that represent particular cost and operating relationships, to the available airfare information.

Price information gathered

Two forms of airfare (price) data were collected and for all routes with more than one operator the data was averaged.

Full economy fare: This information was collected in a survey carried out predominantly in September 1998, with some additional information collected in January 1999. This is typically the price paid by business passengers and it offers the most flexible travel arrangements. The level of passengers on any one flight paying this fare can be expected to differ, it will also differ across particular route types, for example on the predominantly business sector Sydney-Canberra a high proportion of passengers could be expected to be paying full fare. On the other hand on a route such as Ayers Rock-Kings Canyon, which encompasses tourist spots, very few passengers may actually be paying the full economy fare – instead taking advantage of reduced fares by booking well in advance and fitting travel plans to the airlines scheduling requirements.

Best available discount fare: This fare level was found through a survey undertaken in September 1998. People travelling on this fare usually have to meet strict travel requirements – book 14 or 21 days in advance, pay for a return ticket, stay away a Saturday night and face reduced ability to alter flights after payment is made. On average a discount of 35 percent on full fare was received – although 20 percent of the regional routes studied did not differentiate their fares. A discount of 50 percent or greater was available on just over one third of the routes.

On routes for which operators received subsidies the price charged does not reflect the cost of operations as they are partially covered by the subsidy. To ensure the price demand relationship is correctly measured for all routes, those that receive a state government subsidy have been excluded from the analysis. This set of non-subsidised routes provides a point of comparison to determine if an appropriate subsidy is being paid. These results are not presented here.

The need to match route information from the 1997 calendar year, discussed below, and airfare information collected in 1998-99 meant some routes had to be excluded from the analysis. First, routes which no longer operated when the fare data was collected were removed. Second, routes where a significant change in the operations occurred (hence the potential for a significant fare change existed), such as a change of operator resulting in new scheduling or new aircraft types, were also removed.

For stable routes the fares are not expected to have changed substantially between the end of 1997 and late 1998 so results should not be distorted.

Cost information gathered

An examination of airline economics pointed to three factors which are considered to reflect airline costs and for which data is readily available. These are route density, route distance and aircraft size.

Route density: This refers to the number of passengers flying between two ports which reflect the demand for flights. Traffic on board by stage (TOBS) data, which provides a count of the number of revenue passengers on a route sector, was collected on approximately 480 regional routes in operation during 1997 by the then Commonwealth Department of Transport and Regional Development (now the Department of Transport and Regional Services). The number of passengers travelling on particular routes ranged from 17 to over 800,000 for the year.

The low figures are somewhat misleading as they do not, as it appears to suggest, mean that these were the only people on the aircraft. For example many of the sectors with low passenger numbers were also very short in terms of kilometres (less than 100) and formed part of multi sector routes between larger centres. This situation is best explained using an example.

It is possible that an airline flies from A to C via B. Although the level of demand from B to C may be very small it may cost the airline very little to pick up these people en route and allow some passengers to disembark at B. The additional passengers embarking at B will fill seats that would otherwise be empty on the trip from A to C, so the fare paid by these passengers is a bonus to the airline.

Any routes for which airlines did not report passenger density information for the whole period of operation, and for which a full data set was unable to be constructed from the available fragments, were removed from the final data set. It was necessary to use TOBS data, rather than more representative uplift-discharge data, as this enabled directly competing Qantas and Ansett flights to be included in the analysis. Qantas and Ansett passenger levels are only reported in terms of TOBS.

Distance: This is the air distance flown by the aircraft. This figure was calculated from the great circle distance between the two points and is expected to proxy running costs of the aircraft. Assuming all else equal, the total cost for a given aircraft increases with greater distance, but at a decreasing rate of increase; thus, cost per passenger-kilometre is lower the longer the flight.

Average aircraft size: An average aircraft size was calculated for each route by dividing the total passenger numbers by the number of flights and taking account of the load

factor (a measure of how full the aircraft is). As well as indicating costs of operation, this is a partial indicator of service quality – making the assumption that a large aircraft is preferable to passengers than a small aircraft. On routes with only one operator this average aircraft size will reflect the actual operating situation. However, where there is more than one operator, if these use different size aircraft an average aircraft size will not be accurate for particular flights. The classic example is the Sydney-Canberra route where Ansett operates Boeing and/or airbus jets with between 114 and 144 seats, Qantas operates Boeing jets with between 114 and 137 seats and Eastern Australia and Kendell operate DeHavilland Dash 8 turboprops and the Saab 340 turboprops respectively, both of which carry close to 35 passengers. An average aircraft size on this route is 57 seats. As airlines charge similar prices on each route, regardless of the aircraft flown, the average aircraft size should represent the level of average cost to all operators.

Average aircraft size is calculated directly from the route density information so it is clear these two pieces of information are related. There is also a relationship between distance and aircraft size, based on technical limitations and trade-offs. Small aircraft can not fly long distances, and while large aircraft can fly short distances it is not the most efficient operating range for these aircraft so they will cost more to run. The relationship between average aircraft size and these other variables shows that aircraft are not necessarily being chosen in order to provide the most profitable service. Other considerations include the broader operational requirements of the airlines, increasing utilisation of existing aircraft across a given route network and quality of service factors such as flight frequency and passenger desire for bigger aircraft.

Competition information gathered

Number of airlines on route: Knowing how many operators are servicing the route indicates the level of competition experienced. On 66 regional routes Qantas and/or Ansett also offer services. On some of these, and many others, their subsidiaries, Kendell, Skywest, Aeropelican, Airlink, Eastern Australia, Southern Australia and Sunstate, offer services. In terms of competition Ansett and its subsidiaries were treated as a single competitor, as were Qantas and its subsidiaries, as operating decisions are not made independently in these airlines.

Final data set

Not all routes with information available could be used as some had exhibited elements of instability over the period under examination that made the data unrepresentative of the route as a whole. Routes which were serviced infrequently – less than an average of one flight a week were not included. Routes reported with less frequent operations than this were generally due to non-reporting of information or an operator testing a market and withdrawing. These routes were not considered to have 'regular passenger transport' services if an average of less than one flight a week was offered.

This left 227 routes with full information that could be used. This set was considered to be as representative of the Australian regional aviation industry as possible (with the exclusion of Tasmania).

Econometric analysis of airfares

In order to test competitiveness we have applied a regression analysis to the data in an attempt to explain the variation in fares between different routes. The following trans-log (or double log) function which relates airfare to distance, route density, average aircraft size and the number of competitors was estimated with an ordinary least squares (OLS) regression analysis using Shazam.

$$ln(Fare) = \beta_1 + \beta_2\, ln(Distance) + \beta_3\, ln(Density) + \beta_4\, ln(Average\ Aircraft\ Size) + \beta_5\, ln(No.\ of\ Competitors)$$

This equation was examined for both the best discount fare and the full economy fare. Diagnostic tests of the econometric models indicated that assumptions of the OLS estimation were not violated. Specification error was tested for using a RESET test which checks for omitted variables, inclusion of irrelevant variables and the suitability of the functional form. This found no evidence of specification errors.

Analysis using this model has produced results as follows:

- Distance was found to be significant and positively related to the airfare;
- Route density was significant and positive in the full fare equation and insignificant in the discount fare equation. Aircraft size was insignificant in the full fare equation and significant and negative in the discount fare equation. These two variables were found to have a linear relationship which makes the coefficients in the model imprecise and explains the changes between the two models; and
- The number of competitors on the route was found to be insignificant in determining the airfare in both the full economy fare model and the discount fare model.

The variable of interest is the number of competitors. The insignificance of this variable implies that we can not reject the hypothesis that overall the Australian regional aviation market is pricing its services competitively.

The results of the econometric model are shown in Table 1 below.

Dependent variable	β_1 (constant)	β_2 (distance)	β_3 (density)	β_4 (aircraft size)	β_5 (competitors)	*(N=227)*
Full fare	1.09 (7.28)	0.64 (27.08)	0.05 (2.81)	-0.02 (-0.49)	0.04 (0.67)	$R^2 = 0.82$ F = 260.23
Discount Fare	2.61 (16.65)	0.52 (20.73)	0.004 (0.26)	-0.08 (-1.92)	-0.10 (-1.54)	$R^2 = 0.69$ F = 122.5

Note: 1: t-statistics are shown in brackets
2: All variables are in natural logarithms.

Table 1. Coefficients in the econometric model

The model is based on imperfect data. Full economy fares and discount fares were used as a proxy for the average fare charged on particular routes. The full fare model uses the highest estimates of the average fare and the model using the best available discount fare shows the low end of the estimate of average fare. Similarly, average aircraft sizes were used rather than actual size and the TOBS measure of density is a proxy for the true origin-destination density.

Findings

The number of competitors on the route was found to be insignificant in the determination of the airfare for both full economy fares and discount fares. The model shows that the price is primarily related to the distance flown. The other two variables used to explain cost – route density and average aircraft size – were found to have a linear relationship which makes the coefficients predicted by the model imprecise and the t-statistics showed these variables were slightly significant at best.

The results of the model show we can not reject the original hypothesis that pricing in regional aviation is competitive. On routes with a single operator this suggested the possible existence of contestability. That is, that the threat of entry by other operators

may be enough to deter these monopoly suppliers from charging fares that would earn them super-normal profits.

Another possibility, rather than contestability in airline services, is that other available modes of transport, such as road or rail, are acting as competitors with airlines. The travel time by the fastest alternate mode of transport was included as another variable in the model to test if an available alternate mode of transport influenced the airfare. Another model was also examined with a simple boolean variable representing the existence of alternative transport. Both representations of the alternate mode of transport were found to be insignificant in the determination of the airfare in both the full economy fare models and the discount fare models. From this it appears that the presence or absence of an alternate form of transport has no discernible impact on the setting of airfares.

Modelling was also undertaken on a state by state basis (for states with sufficient data available to construct a model, which excludes Tasmania and Victoria). The general conclusions drawn from the Australian model were consistent with the state results. That is, the level of competition on a route appears to be insignificant in the determination of both full economy fare and best discount fare models. Details of the individual state models will be available in future work to be published by the BTE.

Quality of service

Passengers are looking for 'value for money'. This means that as well as price they are considering quality issues in their decision to travel. Although prices were found to be competitive it is possible for differences in quality of service to exist which are not being reflected in the price. In aviation services a number of factors are thought of as impacting on the perceived quality of service that customers receive. Different passengers will have different preferences and different experiences on individual flights. It is necessary to make some generalisations about what levels of individual factors are more preferable.

BTCE (1992) lists several generic aspects of service quality in aviation. Of those, the following four aspect have been considered here for Australian regional aviation.

Frequency of service: Of routes with an average of more than a single one-way flight a week, 28 routes had more than 10 one-way flights a day (ie 5 return flights), another 50 averaged more than 4 one-way flights a day, and another 75 averaged more than 2 one-way flights a day as shown in Figure 1 below.

What constitutes an acceptable level of service varies between passengers. Business travellers may wish to be able to make same day return journeys and would therefore require at least two flights a day (four flights a day would be necessary to allow for same day returns in either direction). Leisure travellers may be happy with less frequent flights depending on the length of their planned trip. Obviously the more flights available the less time a traveller will have to wait from their preferred time of departure until a flight is actually available. Therefore more frequent flights are considered to represent a better quality of service (all other things being equal).

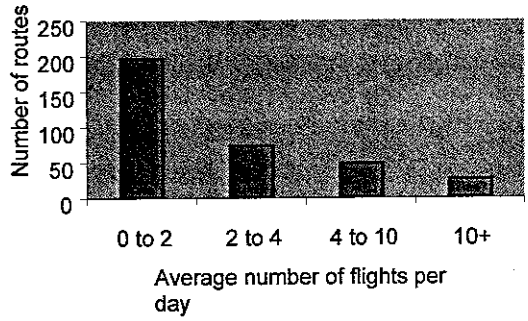

Figure 1. Average number of one-way flights per day

On-time performance: The BTE survey of regional airlines showed that around 95 per cent of flights leave within 15 minutes of the scheduled departure time and arrive within 15 minutes of the scheduled arrival time. Operating within this 15 minute delay band is considered to be 'on-time' performance in aviation activities generally. This good performance can be at least partially attributed to the ease of access to regional airports. Between 1 and 10 percent of flights were cancelled. The reasons for the cancellation of flights were given as being predominantly due to, firstly, a lack of passenger numbers, secondly mechanical difficulties and thirdly the weather.

Safety: There were 4 aviation accidents which involved RPT services (both regional and domestic) in Australia in 1996 (BTE 1998). There were no fatalities in these accidents, 4 people were seriously injured and another 37 people received minor injuries. A total of 528 people, passengers and crew, were involved. When the distances travelled and the number of take-offs and landings are considered this is an exemplary safety record. Safety becomes more of an issue in smaller aircraft but even so statistically passengers are safer on an RPT service than on a similar sized charter aircraft or on the road. Overall safety was considered to be high.

On-board comfort and service: On-board comfort is commonly equated with aircraft size. Many people appear to prefer larger aircraft as they offer more overhead cabin baggage storage, more cabin room, a smoother and faster flight and are considered safer. The model above has partially included this measure of quality. However, as there is a close relationship between size and route density the results are not clear from the model. A snapshot of the range of aircraft sizes used in regional aviation services shows the variation in this aspect of quality. Of the 287 aircraft operating regional aviation services 140 have between 5 and 10 seats, 64 have between 11 and 20 seats, 62 have between 21 and 40 seats and 21 have more than 40 seats. There is a direct trade off between the size of the aircraft used and the frequency of service required to meet a given level of demand. So there is a trade off between flight frequency and on-board comfort to some extent. The level of these factors preferred will be different for different individuals.

On-board service aspects are the food, drinks and entertainment available on the flight. Entertainment is considered to be limited on regional service. A survey of regional airlines in Australia undertaken by the BTE at the end of 1998 showed that slightly more than 40 percent of the responding airlines served food or drink of some kind on their flights. Many of the services on small aircraft do not have cabin crew or cabin service.

From this information it is not possible to make a definitive statement about the importance of quality of service in determining prices for regional aviation services.

Conclusions and further issues

There is a strongly oligopolistic structure in the regional air services industry, a number of barriers to entry and two thirds of regional air routes are serviced by a single operator. These show the potential for uncompetitive pricing practices in regional air services.

The extent to which the market takes advantage of these opportunities is difficult to predict. However, modelling indicated no statistically significant difference in the relative price between monopoly and multiple operator routes.

A BTE study on the regional aviation industry, due to be released next year, will provide a more detailed analysis of the regional aviation industry in Australia.

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