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Deregulation of Domestic Aviation - the First Year

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Bureau of Transport and Communications Economics

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Deregulation of Domestic Aviation - The First Year

Report

The Commonwealth's regulation of interstate aviation, in place for over thirty years, came to an end at midnight on 30 October 1990. This study reviews the developments in the last few months of regulation and in the first year of deregulation.

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Deregulation of Domestic Aviation-the First Year

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FOREWORD

Although all transport industries have been included in the micro-economic reform program, it is perhaps the domestic aviation industry which has changed the most quickly and the most dramatically.

The process of change started as soon as the deregulation decision was taken in October 1987. From then on the major airlines began to compete with each other much more so than in the past. The rivalry in the industry increased as the formal start of deregulation approached and has intensified since then with the entry of Compass and the pressures imposed on all carriers by the economic downturn.

The Bureau has taken this unique opportunity to observe an industry in transition and to analyse the extent to which the policy objectives are being met. In April 1989 the Bureau held a seminar to discuss the preparations being made for deregulation. In May 1991, the developments in the first six months of deregulation were reviewed at a Bureau conference, 'A New Era in Australian Aviation'. More recently, a draft of this paper was discussed at a workshop attended by representatives from the major airlines, academia, financial consultancies and portfolio agencies.

We are continuing to monitor deregulation to gain further insights into its effects. Further work is also under way to examine in more detail the welfare gains from deregulation and to look more closely at the impacts on remote areas and the tourism and other industries closely linked to domestic aviation. The results of these analyses will be published separately.

In the preparation of this paper, Bureau staff paid a number of visits to the airlines and other organisations involved in the day to day operations of the industry. Useful discussions were also held with a number of government agencies and industry analysts. The insights provided by the individuals concerned are gratefully acknowledged.

The study team was led by Professor Curt Grimm, Visiting Fellow in the Bureau from the School of Business and Management at the University of Maryland. He was ably assisted by Brad Jennings, Craig Lawrence and Norm Wuest. They were all able to build on the foundations laid by John Street.

Hugh Milloy
Research Manager

Bureau of Transport and Communications Economics
Canberra
November 1991

CONTENTS

	Page
FOREWORD	iii
ABSTRACT	xi
SUMMARY	xiii
CHAPTER 1 INTRODUCTION	1
CHAPTER 2 AUSTRALIA'S TWO AIRLINES POLICY	3
Historical overview	3
Statistical overview	5
CHAPTER 3 IMPACT OF DEREGULATION ON INDUSTRY STRUCTURE	9
Structural determinants of rivalry	9
Changes in industry structure since deregulation	10
Barriers to entry	18
Natural barriers to entry	19
Firm-created barriers to entry	22
Institutional barriers to entry	29
CHAPTER 4 AIRLINE COMPETITION UNDER DEREGULATION	31
Price competition	31
Longitudinal analysis of fare discounting since deregulation	31
Cross-sectional analysis of winter '91 fare discounts	35
The trade-off between price and service quality in the business market	37
CHAPTER 5 THE CONSUMERS' PERSPECTIVE — FARES	39
Average revenue data	39
Fare changes on the Sydney–Melbourne route	41
Passenger growth and discounting	43

	Page	
CHAPTER 6	IMPACT OF DEREGULATION ON SERVICE QUALITY	47
	Frequency of service	48
	Load factors	52
	Non-stop services	52
	On-time performance	54
	Accessibility to regular public transport services	56
	Choice of operator	57
	Quality of in-cabin and on-ground services	57
	Safety	58
	Discussion	59
CHAPTER 7	EFFECT OF DEREGULATION ON OTHER MODES OF TRANSPORT	61
	Determinants of modal choice	61
	Pre-deregulation	61
	Deregulation of the domestic aviation market	63
CHAPTER 8	CONCLUDING REMARKS	67
	Developments so far	67
	Looking to the future	69
APPENDIX I	CHRONOLOGY OF DEVELOPMENTS IN COMPETITION	71
APPENDIX II	FREQUENCY OF SERVICE PROVIDED BY DOMESTIC AIRLINES	81
APPENDIX III	WELFARE CHANGES	91
REFERENCES		93
ABBREVIATIONS		97

FIGURES

	Page
2.1 Aggregate available seat kilometres and revenue passenger kilometres for Australian domestic aviation, 1976 to 1991	6
2.2 Australian air and rail passengers, 1976 to 1991	6
3.1 Distribution of passengers by ranked city pairs in 1990	12
3.2 Cumulative per cent of passengers ranked by city pairs in 1990	13
3.3 Compass routes as at 1 September 1991	14
3.4 Airline market shares — revenue passenger kilometres, September quarters 1988 and 1991	16
3.5 Airline market shares — passengers, September quarters 1988 and 1991	16
3.6 Number of domestic airlines on each of the top 20 routes in 1988	17
3.7 Number of domestic airlines on each of the top 20 routes in 1991	18
3.8 Benefits of a hub-and-spoke network	21
3.9 Ownership structure of Australian domestic passenger airlines	27
5.1 Real average revenue per passenger kilometre, 1981 to 1990	40
5.2 Melbourne–Sydney real air fares, 1987 to 1991	42
5.3 Domestic airline revenue passenger kilometres since deregulation	43
5.4 Domestic airline available seat kilometres since deregulation	44
5.5 Patronage on domestic airlines since deregulation	44
6.1 Percentage of flights arriving and departing within 15 minutes of the scheduled time	55
III.1 Welfare changes resulting from deregulation	91

TABLES

	Page	
3.1	Estimates of direct operating costs for Compass and the main incumbent airlines	13
3.2	Domestic passenger movements at major airports	23
4.1	Regression results — discount fares	36
5.1	Trunk route characteristics, August 1991	41
6.1	Comparison of regular public transport frequencies on the top 40 routes between the June quarter 1990 and the June quarter 1991	49
6.2	Comparison of domestic airline frequencies on the top 40 routes between the June quarter 1990 and the June quarter 1991	51
6.3	Comparison of domestic airline average load factors on the top 40 routes between the June quarter 1990 and the June quarter 1991	53
7.1	Change in air travel, 1987 to 1990	62
7.2	Intermodal comparison: January and May 1991	62
7.3	Comparison of standard Greyhound/Pioneer coach fares with discounted air fares, winter 1991	64
II.1	Service frequency on top 40 routes served by domestic airlines, March quarter 1990 to June quarter 1991	82
II.2	Average aircraft seating capacity on top 40 routes served by domestic airlines, June quarters 1990 and 1991	88
II.3	Weekly service frequency on main routes served by domestic airlines, mid 1990 and mid 1991	89

ABSTRACT

The Commonwealth's regulation of interstate aviation, in place for over thirty years, came to an end at midnight on 30 October 1990. This study reviews the developments in the last few months of regulation and in the first year of deregulation.

Based on the first year's evidence, deregulation of domestic aviation in Australia has, from the consumers' perspective, been very successful. Reliance on market forces and competition, as opposed to regulation, has so far provided clear benefits to consumers in terms of lower fares and improved service quality.

In particular, discount airfares have been much deeper and more readily available under deregulation. Between the September 1990 and June 1991 quarters, real average fares over a large sample of the top 20 routes fell by 12 per cent.

Service quality on a number of dimensions has also improved with deregulation. Most notably, an analysis of the services provided by domestic and commuter operators on the top 40 routes indicated that there was a 21 per cent increase in the number of flights between the June quarters of 1990 and 1991.

The airlines have been able to reduce costs, but their financial performance has been adversely affected by the recession and the increased level of competition in the industry.

The analysis suggests that the expected outcomes from deregulation are being realised so far.

SUMMARY

BACKGROUND

The Commonwealth's regulation of interstate aviation was in place for over thirty years. However, over time the two airlines policy began to be increasingly criticised.

In October 1987 the Government gave notice that it would terminate the Airlines Agreement in October 1990 and allow the market to operate within the constraints of the established competition policy controls applicable to industry generally. In announcing its decision, the Government indicated that its objective was to create an environment which would foster:

- increased responsiveness by airlines to consumer needs;
- a wider range of fares and types of services to provide enhanced travel opportunities;
- increased competition and pricing flexibility, leading to greater economic efficiency in the industry; and
- a continuation of Australia's world-renowned aviation safety record.

The two airlines policy came to an end at midnight on 30 October 1990. This paper reviews the developments in the last few months of regulation and in the first year of deregulation. The work follows the industrial organisation paradigm that industrial structure influences firm conduct, which in turn shapes market performance.

DEVELOPMENTS SINCE DEREGULATION

Competition within the industry

An important goal of deregulation was increased competition, which appears to have been achieved. Industry concentration has been significantly reduced, due largely to the entry of Compass. Only one month after the formal start of deregulation Compass Airlines commenced operations, and now provides services to Sydney, Melbourne, Brisbane, Adelaide, Perth and Cairns.

The emergence of Compass, with a national market share of more than 10 per cent in its first year of operation, illustrates that although some barriers to entry may be present in the industry, such barriers are not impregnable. For example, the terminal facilities available to new entrants, although limited, have allowed Compass to enter the market and there is further room for another entrant onto the busiest trunk routes. The availability of terminal access has greatly facilitated the establishment of structural conditions to achieve adequate competition under deregulation.

A regression analysis of discount fares across the top 100 markets confirms that the presence of Compass in a particular market has been a significant stimulus to competition. In addition, the analysis reveals that the two incumbents are now competing with each other to a great degree, much more so now than under regulation.

Changes to fares

In the months before deregulation the incumbent airlines adopted a much more flexible and innovative approach to the introduction of discount fares. This trend has intensified in the more competitive environment since deregulation. In particular, discounts have become deeper, given that highly restricted 45 per cent discounts on full economy fares were generally the best available in the years before deregulation, while less restricted discounts of 60 to 70 per cent have been available during 1991.

The principal source of data on the use of discount fares is the Prices Surveillance Authority (PSA), which was directed by the Government in February 1991 to monitor movements in average fares on interstate routes. The PSA has so far collected quarterly data on average fares and passenger numbers from the airlines for each of the top 20 routes and has aggregated these to provide industry average fare indices. The analysis was then focused on the seventeen top 20 routes which are either interstate or have a minimum of three operators.

The PSA has reported that, on these seventeen routes, aggregate average revenue has fallen by 9.9 per cent in nominal terms between the September 1990 and June 1991 quarters. Adjusted for inflation this means that the average fare on these routes fell by 12.2 per cent in real terms.

Moreover, since over 80 per cent of passengers fly on the top 20 routes, there has clearly been a significant reduction of fares system-wide. Even under the very conservative assumption that average fares did not change on the other routes, the fall in the real average fare across the entire domestic aviation network was about 10 per cent by the end of June 1991. Since then, it is likely that average fares have fallen even further as the airlines have been engaged in the most intense fare war to date.

The benefits of lower fares appear to have been slightly greater on routes with high traffic densities and more operators. For example, the maximum discounts on the routes directly linking Sydney, Melbourne, Brisbane and Perth averaged

63 per cent off the incumbents' standard economy fares, while on a sample of 21 other routes in the top 40, the maximum discount was 58 per cent less than the standard economy fare on average.

Changes to service quality

Overall, service quality on a number of dimensions has improved since deregulation. Among the indicators of service quality assessed in the report are the following:

Flight frequency. An analysis of the services provided by domestic and commuter operators on the top 40 routes indicated that there was a 21 per cent increase in the number of flights between the June quarters of 1990 and 1991. As in the case of fare decreases, the benefits were distributed widely across routes and not restricted to the routes on which Compass operates. The largest increases have occurred on the Brisbane–Cairns and Brisbane–Mackay routes, with increases of 115 and 107 per cent respectively.

Non-stop services. One of the main disadvantages to consumers from deregulation in the United States was a decrease in nonstop services between many locations due largely to the establishment of hub-and-spoke networks. So far there has been no evidence of hub-and-spoke networks forming in Australia, and in fact there is some evidence that there has been a slight increase in non-stop services since deregulation. The passengers who are able to take advantage of this trend benefit from shorter transit times and avoid the inconvenience of changing aircraft.

On-time performance. Over the past year there have been improvements in on-time performance for aircraft arrivals and departures at the main capital city airports. This is in contrast to the situation in the United States after deregulation where flight delays occurred at many airports because infrastructure capacity did not keep pace with the increase in demand.

In-cabin and on-ground services. Improvements to in-cabin services have also been significant. Compass and Eastwest, with their one class cabins, have chosen to provide generous space for passengers, while Australian and Ansett now provide more space and upgraded service in the battle for market share for premium class passengers.

On the ground, business passengers have benefited from improvements to lounges and a range of services such as valet parking.

Network capacity and patronage

The overall capacity offered on domestic airline routes has increased substantially since deregulation. In the year ended September 1991, which included eleven full months of deregulation, industry capacity was 22.1 billion available seat kilometres, which was 23 per cent greater than the previous record achieved in the year ended September 1988 and 43 per cent greater than for the

year ended September 1990. The large increase in capacity between the year ended September 1990 and the year ended September 1991 may be explained in part as recovery from the airline pilots' dispute. However, given that capacity this year has exceeded the previous all time high of 1988, which was achieved under more favourable economic circumstances, a significant component of industry growth should be attributed to stimulation of the market by incentives made possible under deregulation.

Patronage has also climbed to record levels since deregulation, despite the economic recession. The domestic airlines performed a record total of 16.1 billion revenue passenger kilometres (RPK) for the year to September 1991 and the RPK figure for the September 1991 quarter was 45 per cent higher than the corresponding figure for last year.

Although data on patronage of competing modes is limited, it is clear that low discount fares have drawn significant numbers of passengers from intercity rail and bus operators.

OVERVIEW OF DEVELOPMENTS SO FAR

Based on the first year's evidence, deregulation of domestic aviation in Australia has, from the consumers' perspective, been very successful. Reliance on market forces and competition, as opposed to regulation, has so far provided clear benefits to consumers.

The benefits from deregulation have extended to a broad range of markets. In particular, reduced fares and improved service frequency have extended well beyond the Adelaide–Melbourne–Sydney–Brisbane corridor. Destinations such as Perth and Cairns have been among the greatest beneficiaries; indeed, the Northern Queensland tourism industry has enjoyed a dramatic turnaround, largely as a result of discount fares. While consumer benefits from discounted fares and improved frequencies have often been greatest in the markets where Compass has entered, significant benefits have extended to a broad range of markets. For example, travellers in cities such as Darwin and Hobart have also been clear beneficiaries from deregulation.

Although it is not yet possible to quantify the change in consumer surplus from deregulation, it is clear that consumer surplus has increased. Studies of the impact of deregulation on consumer surplus in other countries have shown that consumer surplus depends primarily on the level of fares, the average time between flights (flight frequency), and the average duration of flights. Australia's domestic deregulation has clearly produced lower fares and shorter average times between flights. Given that on balance there appear to be more non-stop services in the wake of deregulation, the average duration of flights has arguably declined slightly as well. Thus, consumer surplus has unambiguously improved.

There have been bright spots as well from the carriers' perspective. There is clearly improved production efficiency in the industry with, on average, lower cost of providing service. This is partly due to Compass's low cost entry and partly due to the efforts by the incumbent domestic airlines to cut costs.

On the other side, the airlines have experienced the effects of a large increase in overall capacity and greater price competition during a recession. As a result the profitability of the airlines has been adversely affected. However, data are unavailable for detailed study of airline financial performance.

Although a quantification of economic effects of domestic deregulation involving counterfactual estimates of both consumer and producer surplus has yet to be tackled, the evidence strongly suggests that economic welfare has unambiguously improved so far. The evidence is convincing that deregulation has brought about lower prices and reduced costs.

LOOKING TO THE FUTURE

What does the future hold for the Australian domestic aviation industry? It is predicted that the benefits enjoyed by consumers in the first year will be sustained over time, although perhaps not to the same level. This prediction is in contrast to a number of recent media reports which have argued that fare discounting has caused the airlines to lose money. Thus, the argument goes, it is inevitable that discounting and fares return to pre-deregulation levels. This is a specious argument as it neglects two important factors, namely the recessionary impact on business travel and the potential for airlines to further rationalise costs.

It is quite clear that the recession has had a dramatic impact on business travel. This loss of high yield patronage has had serious adverse financial consequences for the airlines. Both the recession and the fare discounting under deregulation have contributed to the weak financial performance of the airlines in the past year.

As discussed above, airlines have proceeded with a modicum of cost rationalisation. However, the analysis indicates that there is considerable scope for further cost rationalisation in Australian domestic aviation. Continued competition under deregulation, in conjunction with disappointing financial performance, will be an incentive for airlines to proceed with efforts to cut costs. Thus, the most likely scenario is that as the economy improves and airlines continue with their efforts to cut costs, industry profits will improve while fare discounting will persist.

Beyond this general prediction, our analysis suggests that the future direction of competition and market performance will be strongly influenced by future industry structure. Given the existence of a competitive environment, it appears likely that discounting will continue for the foreseeable future. Although the intensity of competition may moderate somewhat with an upturn of the economy and market growth to reduce excess capacity, it is anticipated that fare discounting and levels

will resemble more closely the experience in the first year of deregulation than the pre-deregulation experience. Indeed, competition could be enhanced by the introduction of services by more new entrants.

The competitive environment which has existed since deregulation has resulted in significant changes to the structure of the industry. A new entrant has shown that, although some barriers to entry exist, these can be overcome. Moreover, the presence of a new operator, with a different cost structure, operating practices and marketing techniques, has greatly increased the rivalry between all domestic carriers.

It is likely that these structural and behavioural changes are here to stay. In the coming years the ownership of the airlines may change, and the aircraft may have to be repainted in different colours, but the industry is now operating in a fundamentally different way. So far it appears that the Government's deregulation objectives are being met.

CHAPTER 1 INTRODUCTION

At midnight on 30 October 1990 the 'two airlines policy' came to an end. For the first time in 38 years, Australia's interstate air services were open to free competition. This paper reviews the developments in the last few months of regulation and in the first year of deregulation. It focuses on the impact of deregulation, both on the airline industry and on the travelling public. More generally, it addresses the question: have the objectives of deregulation been met so far?

The structure of the paper is as follows. Chapter 2 provides an historical overview of the two airlines policy and the statistical trends during the last years of regulation. Chapter 3 lays out the theoretical basis for the work, drawing from the industrial organisation paradigm that industrial structure influences firm conduct, which in turn shapes market performance. Chapter 3 also details the salient structural features of the airline market and describes how the structure has changed since deregulation. Chapter 4 examines firm pricing conduct under deregulation and includes both longitudinal and cross-sectional assessments of pricing behaviour. A primary finding of the chapter is that changes in market structure predict quite accurately the pricing behaviour of firms under deregulation.

Chapters 5 and 6 examine market performance from the consumer perspective, focusing on fares and service quality respectively. Chapter 7 examines the effect of deregulation on other modes of transport. Chapter 8 draws conclusions and looks to the future.

CHAPTER 2 AUSTRALIA'S TWO AIRLINES POLICY

HISTORICAL OVERVIEW¹

In the early 1950s the two main airlines in Australia were the government-owned Trans-Australia Airlines (TAA) and the privately owned Australian National Airways (ANA). However, the future of ANA looked bleak in the face of strong government support for TAA. In an attempt to ensure ANA's ongoing financial viability, and so to guarantee competitive services on the major domestic routes, the Menzies Government developed the 1952 Civil Aviation Agreement between the Commonwealth and ANA. This agreement did not exclude other carriers from operating interstate trunk route services or from importing new aircraft, nor did it attempt to restrict route access.

Despite the assistance to ANA under the 1952 agreement, the airline's financial position continued to deteriorate and it was taken over by Ansett Transport Industries (ATI) in 1957.

This led to the development of the 1957 Civil Aviation Agreement, which allowed only TAA and Ansett Airways, as parties to the agreement, to operate trunk route services. Under this version of the two airlines policy, the industry stabilised and developed in the 1960s and early 1970s. This stability, combined with the viability of the main operators, helped to justify the extensive public investment in infrastructure required to introduce sophisticated jet aircraft.

However, domestic aviation policy began to be increasingly criticised on the grounds that effective competition had not been achieved and both airlines were operating the same equipment on the same routes with the same schedules for the same fares. In response to these criticisms some changes were made to the agreement in 1972.

1. Much of the material in this historical overview is based on the paper 'Competition policy in domestic aviation — or the rise and fall of the two airlines policy', prepared by D. Campbell of the Department of Transport and Communications.

The policy debate, partly stimulated by dramatic decreases in price and increases in availability of international air travel, continued through the 1970s. The end result was the introduction in 1981 of a package of legislation which remained largely unchanged until its repeal with deregulation in October 1990. The 1981 Airlines Agreement was designed to increase the level of competition within the industry, but it maintained the basic thrust of the two airlines policy as it applied to the trunk route network.

The fundamental question of the Commonwealth's role in the economic regulation of interstate aviation was addressed by the Independent Review of Economic Regulation of Domestic Aviation (May Review), commissioned by the Hawke Government in 1985.

The May Review, which took place over about two years, was critical of the existing arrangements and drew attention to significant public dissatisfaction with the current policy, including the widespread view that it worked to the disadvantage of consumers and encouraged the airlines to serve the high yield (business) market to the detriment of the leisure market. It found that, in comparison with its overseas counterparts, Australian aviation was characterised by relatively low labour productivity and relatively high and stable profit levels.

In October 1987 the Government gave notice that it would terminate the Airlines Agreement in October 1990 and allow the market to operate within the constraints of the established competition policy controls applicable to industry generally (Evans 1987). In announcing its decision, the Government indicated that its objective was to create an environment which would foster:

- increased responsiveness by airlines to consumer needs;
- a wider range of fares and types of services to provide enhanced travel opportunities;
- increased competition and pricing flexibility, leading to greater economic efficiency in the industry; and
- a continuation of Australia's world-renowned aviation safety record.

In practice, the deregulation decision meant that from 31 October 1990 the Government withdrew from economic regulation of the following four matters.

Firstly, controls over the importation of aircraft were removed. These controls provided the basis for the legislative and contractual arrangements which regulated the industry.

Secondly, the detailed determination of the passenger capacity that could be provided by each trunk airline ceased. Under the two airlines policy, Ansett and Australian had equal capacity over competitive routes.²

2. In 1986 the Australian National Airlines Corporation changed its trading name from Trans-Australia Airlines to Australian Airlines.

Thirdly, the Independent Air Fares Committee (IAFC), which set all fares for scheduled passenger services, was abolished and the Commonwealth withdrew from the determination of air fares. During the nine years in which the IAFC set fares, the revenue per passenger kilometre, averaged over Ansett, Australian and Eastwest services, decreased slightly in real terms.

Fourthly, the constraints on the entry of new domestic operators to trunk routes were removed.

In strict terms, the two airlines policy did not apply to interstate routes, but rather to the provision of scheduled passenger services over trunk routes (which included both interstate and intrastate routes). Under the *Airlines Agreement Act 1981*, a trunk route was defined as any route linking the following 18 trunk route centres: Adelaide, Alice Springs, Brisbane, Cairns, Canberra, Coolangatta, Darwin, Gove, Hobart, Launceston, Mackay, Melbourne, Mount Isa, Perth, Proserpine, Rockhampton, Sydney and Townsville.

Much of the analysis in the following chapters focuses on the changes since deregulation on the trunk route network. However, some of the impact of deregulation has been, and will continue to be felt, on non-trunk routes serviced by the main domestic airlines and the commuter airlines affiliated with them.

STATISTICAL OVERVIEW

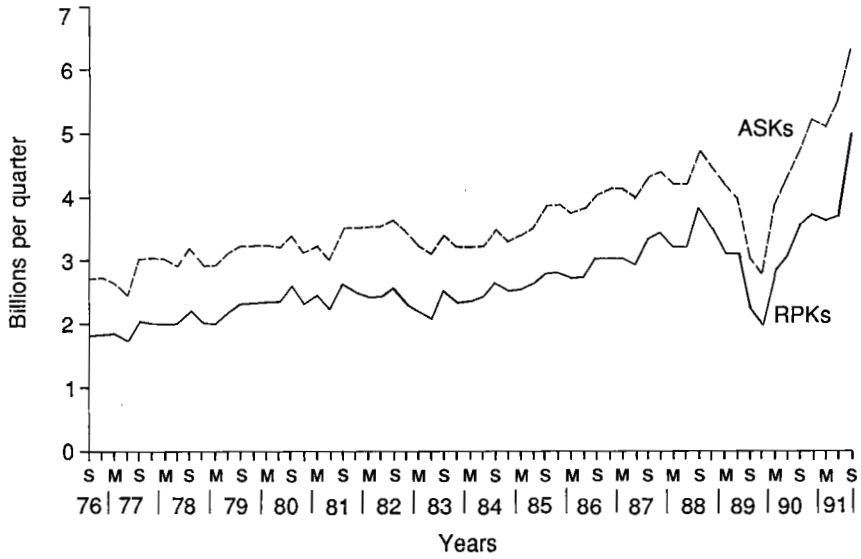
The airlines which supply scheduled passenger services within Australia are usually categorised in terms of domestic or commuter operators. By definition, a *domestic* carrier operates scheduled regular public transport (RPT) services with aircraft with 38 seats or more or with a payload of more than 4200 kilograms; a *commuter* carrier operates scheduled RPT services with aircraft less than 38 seats (DoTC 1991a). At present the domestic carriers are Ansett Australia, Ansett Express, Ansett WA, Australian Airlines, Australian Airlink, Compass Airlines, Eastern Australia Airlines and Eastwest.

The growth in the supply, in terms of available seat kilometres (APK), and use, in terms of revenue passenger kilometres (RPK), of the services provided by the domestic airlines over the past 15 years are shown in figure 2.1.³

The main features of the time series data in figure 2.1 are:

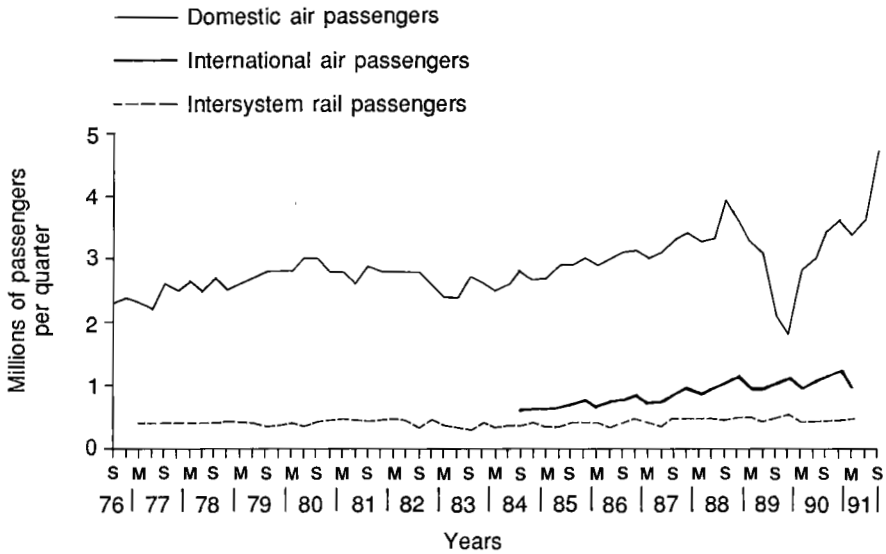
- the decrease in activity during the economic downturn of 1982–83;
- the period of strong growth starting in 1983 and culminating in the Bicentennial and Expo activities of 1988;

3. For some applications the statistics in figure 2.1 may need to be treated with caution as since 1977 there has been a decline from about 130 to 45 in the number of airports serviced by domestic carriers (Henchy & Smith 1991). In almost all cases commuter airlines now provide scheduled RPT services to the airports affected by these operational changes.



Source DoTC (1991c).

Figure 2.1 Aggregate available seat kilometres and revenue passenger kilometres for Australian domestic aviation, 1976 to 1991



Sources ABS (1991); BTCE unpublished data; DoTC (1991c).

Figure 2.2 Australian air and rail passengers, 1976 to 1991

- the effect of the pilots' dispute in 1989–90; and
- the record levels of activity since deregulation of interstate aviation from 31 October 1990.

It follows from the data in figure 2.1 that the average load factor for domestic airlines in the period 1976 to 1989 was, with few exceptions, in the range 67 to 77 per cent.

Figure 2.2 shows the variation over time of the number of passengers carried by the domestic airlines (measured in terms of revenue passengers uplifted on each flight). In the period from 1976 until the pilots' dispute in 1989–90, patronage grew on average by 2.5 per cent per year.

To put the task performed by the domestic carriers into a broader perspective, the patronage levels for intersystem rail transport and international air travel to and from Australia have also been included in figure 2.2. In 1987, for example, domestic airline patronage was about eight and four times greater than international air and long distance rail patronage respectively. In the same year patronage on the domestic airlines was about eleven times greater than patronage on commuter airlines. Data on long distance coach and car travel are not available for comparison.

CHAPTER 3 IMPACT OF DEREGULATION ON INDUSTRY STRUCTURE

One of the Government's main objectives in deregulating domestic aviation was to foster greater competition in the industry (Evans 1987). The standard paradigm in industrial organisation economics posits that the degree of rivalry among firms in an industry is largely a function of market structure. That is, structural features such as the number of sellers and buyers, barriers to entry and the cost structures of firms will strongly influence the intensity of rivalry among firms. It follows that in understanding airline behaviour since deregulation and in predicting the future competitiveness of the market, careful attention should be paid to structural conditions, in particular, to changes in structure which have occurred since deregulation.

This chapter begins with an examination of the theory regarding structural determinants of rivalry. This is followed by an examination of salient structural features in the post-deregulation domestic airline market. Changes in concentration and factors influencing rivalry are also examined, and the chapter concludes with an assessment of entry barriers in the domestic airline industry — a critical factor in determining industry structure now and in the future.

STRUCTURAL DETERMINANTS OF RIVALRY

The industrial organisation economics literature has focused on a number of key structural determinants of the degree of competition (Scherer & Ross 1990). These include the number of competitors, degree of new entry, strength of industry demand/degree of excess capacity, and homogeneity of firms in costs and size. Each will be discussed in turn.

Number of competitors

As more firms compete in a market, the degree of rivalry will become more intense. With more firms, the chances are greater that any one maverick firm will set off a fierce competitive skirmish. Also, with additional firms, coordination of market response becomes more difficult.

Existence of new entrants

New entrants typically inject a great deal of rivalry into an industry. Such firms may come in with low prices in an effort to attract customers from existing firms. Also, a new firm may not be familiar with the established signalling and other communication mechanisms which may reduce the level of competition. Also, new entrants frequently increase the degree of industry capacity and heterogeneity, which, as discussed below, also tends to accelerate the intensity of competition. On the other hand, strong entry barriers increase industry stability and can result in lower rivalry, in that firms can more easily engage in long-term mutually beneficial actions if they are confident the same set of players will be in the industry over time.

Strength of industry demand/degree of excess capacity

A growing industry demand will facilitate a 'live and let live' attitude on the part of firms. In general, a growing market can encourage stability, as each firm can grow in size without rocking the boat. On the other hand, a decrease in demand or even a fall in the growth rate, perhaps brought about by an economic downturn, can lead to competitive warfare.

Related to industry demand is the degree of capacity utilisation in the industry. Firms producing at close to full capacity have little incentive to try to increase output by lowering prices. On the other hand, if firms are faced with excess capacity and idle resources, the temptation is great to lower prices and increase output in an effort to fill excess capacity. As such, a fall in industry demand, where capacity cannot be reduced easily, can have a particularly strong effect on increasing rivalry. Also, a new entrant, where existing competitors cannot readily reduce capacity, will even in the face of strong economic conditions lead to excess capacity at least in the short term.

Homogeneity of costs and size

Firms with similar cost structures will find it easier to tacitly agree on the same price structures to maximise joint industry profits. Widely varying costs among firms will generally result in stronger rivalry. Also, if firms are similar in other dimensions such as size, corporate culture and length of time in the industry, coordination will be easier and rivalry will be less intense.

CHANGES IN INDUSTRY STRUCTURE SINCE DEREGULATION

The above theory suggests that changes in the degree of competition would be sharply influenced by changes in industry concentration, existence of new competitors, degree of excess capacity and heterogeneity of competitors. This section will examine the changes in these structural features.

Compass's entry

Competition from new entrants has been one of the important policy objectives of deregulation of domestic aviation. The role that Compass Airlines has played since deregulation has been critical in stimulating passenger demand and fostering substantial discounting of fares.

Compass commenced operations on 1 December 1990 with two Airbus A300-600R aircraft. The expected heterogeneity of service is exemplified by Compass's plan to offer a one-class service with two key features not currently offered by Ansett or Australian, more leg-room and in-flight video entertainment. At the same time Compass cut in-flight service costs.

In the initial start-up phase Compass encountered several difficulties. For example, delays were caused by a lack of refuelling facilities at Sydney airport, and the reservations system caused some problems. The arrival of the third Airbus was delayed from February to 1 April 1991. Additional capacity was put in place in mid July with the arrival of an A310 aircraft and on 26 August with the arrival of Compass's fourth A300-600R aircraft.

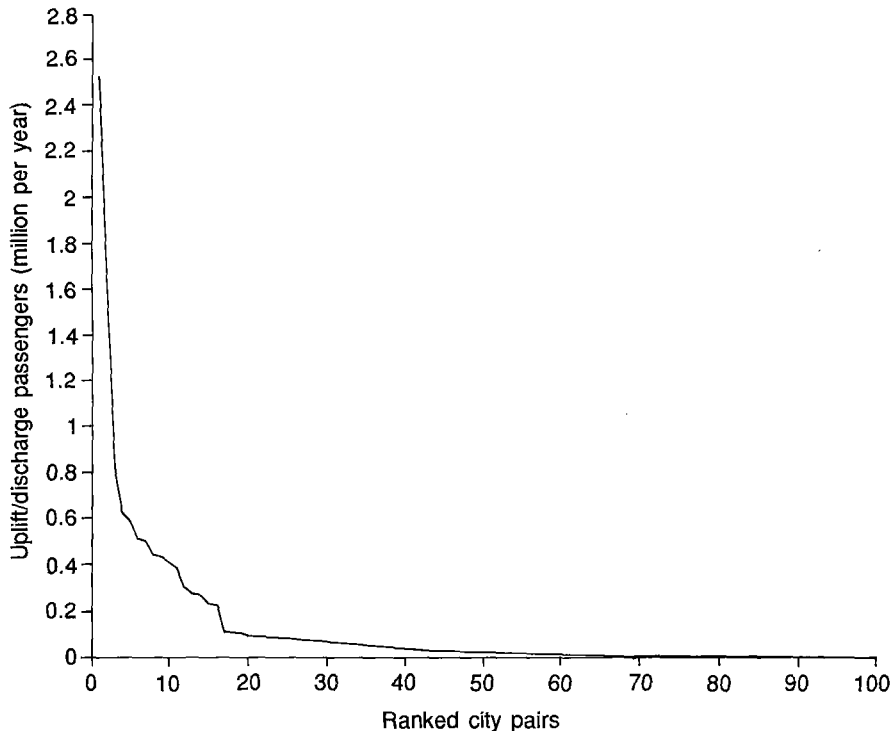
As at 1 October 1991 Compass operated with five aircraft into Adelaide, Brisbane, Cairns, Melbourne, Sydney and Perth. Brian Grey has indicated that Compass's choice of a wide-bodied aircraft was dictated by gate limitations at the major airports (BTCE 1991).

As illustrated by figures 3.1 and 3.2, one of the features of the Australian domestic aviation industry is that a new competitor can gain access to a large number of passengers by flying on only a small number of key routes. This has been the strategy pursued by Compass. Its route structure, shown in figure 3.3, reveals how it is using Melbourne airport as its major operations centre. The eight routes on which Compass offers most of its services are Melbourne–Sydney, Melbourne–Perth, Brisbane–Sydney, Perth–Sydney, Brisbane–Melbourne, Adelaide–Melbourne, Cairns–Melbourne, Adelaide–Sydney. These routes accounted for about 75 per cent of all Compass services on 1 September 1991.

Melbourne has less congestion than Sydney airport and Compass stages all its aircraft through this centre. In addition, by running a common fleet from this airport it reduces dead-heading of crews and minimises overnight stays by crews at other destinations. Long-haul services, such as Melbourne–Perth and Perth–Sydney, enable Compass to take advantage of lower costs per seat kilometre.

Compass's cost advantage

An important issue regarding the present and future strength of Compass is its operating costs in comparison to the incumbent airlines. Direct operating costs of Compass and the incumbent airlines were estimated using the BTCE's Aerocost software. For Compass, an Airbus 300-600R was simulated, with a utilisation of 4200 hours per annum and a 1250 kilometre average stage distance.

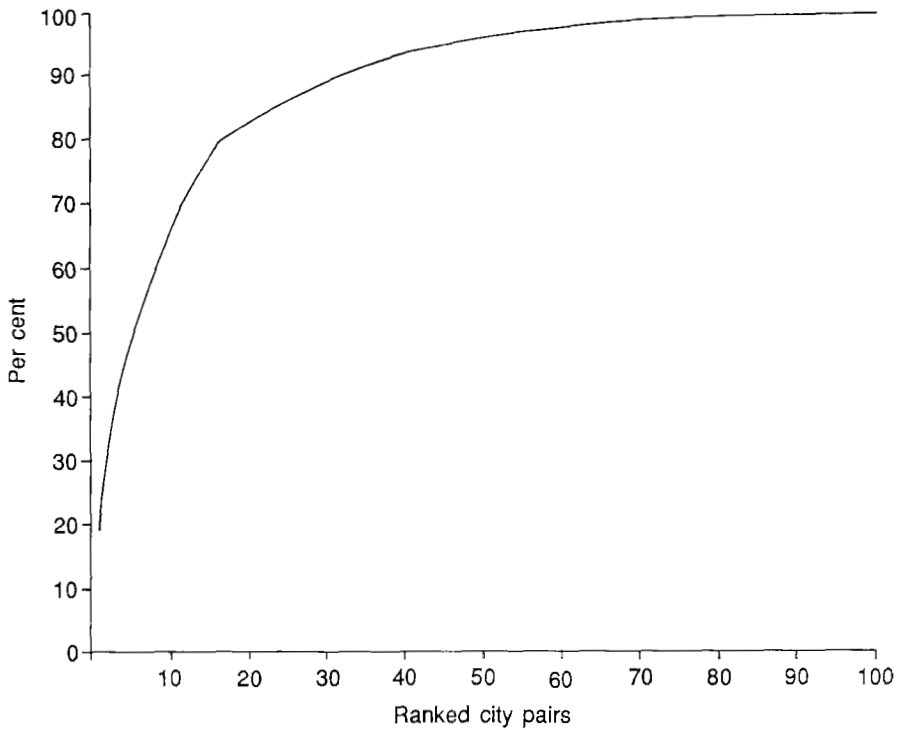


Source DoTC (1990).

Figure 3.1 Distribution of passengers by ranked city pairs in 1990

A range of aircraft, including B727s, B737s, B767s, A300s and A320s were simulated to represent the incumbent airlines. Utilisation was assumed to be 3300 hours per annum with a 1000 kilometre stage distance. The average cost components for the incumbent airlines were estimated by weighting the individual aircraft cost components by the total hours used for each aircraft type in 1990.

It is estimated that Compass's direct operating costs per available seat kilometre are 5.3 cents compared to 8.5 cents for the incumbent airlines (see table 3.1). The difference can be accounted for mainly by the increased utilisation of the Compass aircraft, the longer average stage distance and the economies of operating larger aircraft. When the Compass operation was simulated with a utilisation of 3300 hours, costs per seat kilometre rose to 5.7 cents. Using an average stage distance of 1000 kilometres, costs increased further to 6.1 cents per seat kilometre. It follows that, of Compass's original 3.3 cents cost differential, 12 per cent is due to greater aircraft utilisation, and another 14 per cent due to the longer average stage distance. However, the main advantage is inherent in the larger aircraft that Compass uses.



Source DoTC (1990).

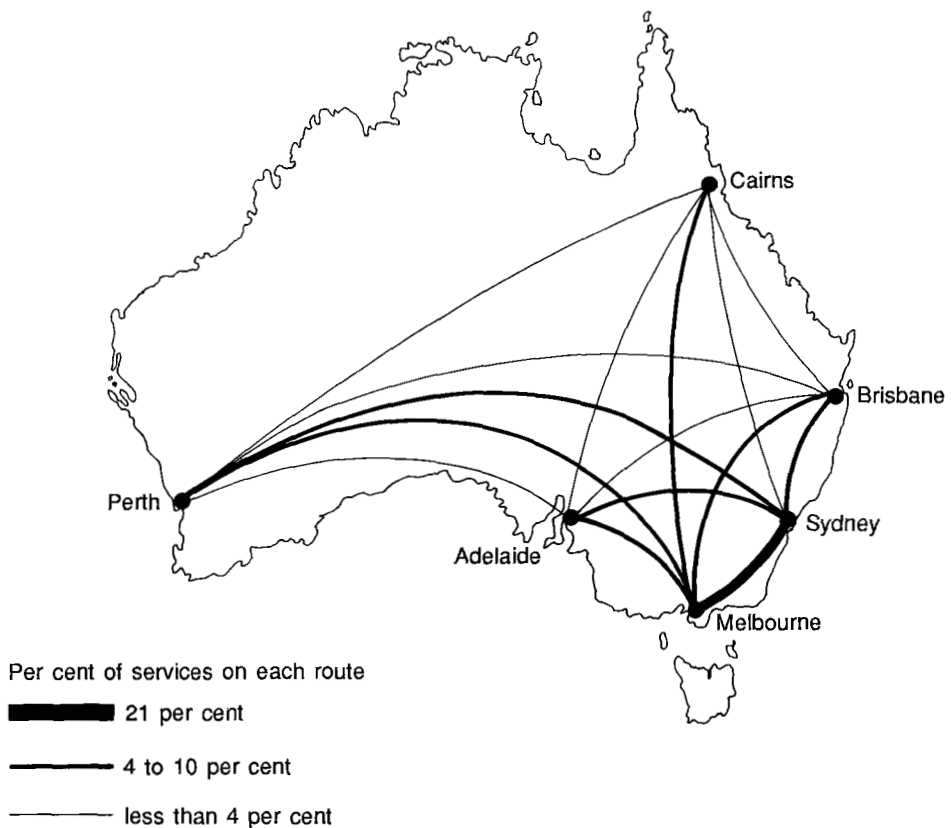
Figure 3.2 Cumulative per cent of passengers ranked by city pairs in 1990

TABLE 3.1 ESTIMATES OF DIRECT OPERATING COSTS FOR COMPASS AND THE MAIN INCUMBENT AIRLINES

(cents per available seat kilometre)

	<i>Compass</i>			<i>Incumbent</i>
	<i>Base</i>	<i>Utilisation</i>	<i>Stage</i>	
Capital	1.36	1.74	1.81	1.56
Fuel	0.70	0.70	0.73	0.88
Maintenance	0.89	0.89	0.93	1.64
Crew	0.32	0.34	0.35	0.74
Government	1.44	1.44	1.60	1.90
Other	0.56	0.56	0.70	1.55
Total	5.26	5.65	6.11	8.52

Source BTCE estimates.



Source Compass flight schedule.

Figure 3.3 Compass routes as at 1 September 1991

In terms of the direct operating cost components, Compass's aircraft have higher capital costs per seat kilometre than the incumbent airlines (because they are newer), but are much more fuel efficient and less costly to maintain. The difference in crew costs is partly due to the continued presence of three member cockpit crews in some aircraft and the higher number of flight attendants per seat in the aircraft flown by the incumbents. Compass's costs per seat kilometre for the 'other' component of the direct operating costs (which includes provisioning and ground services), are estimated to be less than half the incumbents' costs.

The Bureau estimates that Compass's overheads are 2.7 cents per ASK compared to 5 cents for the incumbents. That is, Compass not only holds an advantage over the incumbents in direct operating costs, but also has much leaner overheads. This results in total costs per ASK of about 8 cents for

Compass and 14 cents for the incumbents. Compass Airlines' Chief Executive Officer, Bryan Grey, claims that Compass's total costs per ASK are 7.5 cents, compared to about 14 cents for the incumbent airlines.

Although the cost analysis in table 3.1 provides some insights into Compass's competitiveness, it only tells parts of the story. Unlike the situation in the United States, revenue data for individual airlines are not publicly available in Australia. The only publicly available revenue data are the industry-average fare indices published by the Prices Surveillance Authority. These are discussed in chapter 5.

Changes in market concentration

The entry of Compass has reduced the level of industry concentration which existed under regulation. Since entering the market, Compass has gained 10 per cent of the total aviation market and, by 1 September 1991, had captured 21.3 per cent of the markets in which it was then operating. More detailed information on Compass's share of the airline market over time and how its growth has affected other airlines' market shares is provided in figures 3.4 and 3.5. Roy Morgan research statistics report that Compass had attracted 8.9 per cent of all business travellers by October (Blackburn 1991).

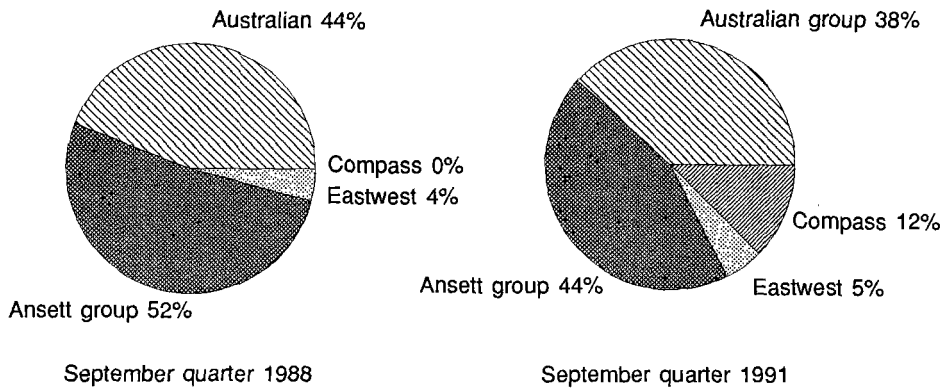
Further insight into the structural changes brought about by deregulation can be obtained by examining the number of competitors on each of the main routes. Figure 3.6 shows the top 20 routes for 1988, and figure 3.7 shows the top 20 routes so far in 1991. Two routes, Devonport–Melbourne and Karratha–Perth, were replaced in the top 20 by Cairns–Sydney and Adelaide–Alice Springs, between 1988 and 1991.

It can be seen from a comparison of figures 3.6 and 3.7 that additional competition has been generated on the following ten routes: Melbourne–Sydney, Brisbane–Sydney, Adelaide–Melbourne, Brisbane–Melbourne, Adelaide–Sydney, Melbourne–Perth, Canberra–Melbourne, Brisbane–Cairns, Adelaide–Perth, and Cairns–Sydney. Eastwest withdrew from the Perth–Sydney route, but the number of competitors was maintained by the entry of Compass.

Potential new entrants

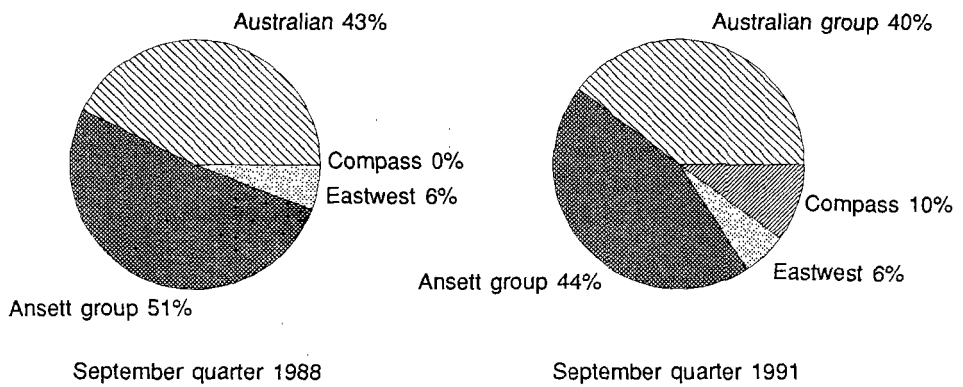
Other potential entrants at this stage are AAA Airlines, Air Hibiscus, Capitol Airlines of Australia, Seaboard Airlines, Southern Cross Airlines and Transcontinental Airlines of Australia. Reports in the media suggest that Transcontinental and AAA are the two airlines which are the most likely to enter the market, along with a new small regional operator, Northern Australian Airlines, which is expected to challenge Ansett WA with four Fokker 100s.

Transcontinental Airlines proposes to provide a business-oriented service with a fleet of six B737-500 aircraft. This aircraft, which normally seats 122, will be configured to seat 90 for Transcontinental. The airline intends to offer a three class first/business/economy configuration with business class fares for first class, full economy for business class and a discount rate for economy



Source DoTC (1991c).

Figure 3.4 Airline market shares – revenue passenger kilometres, September quarters 1988 to 1991

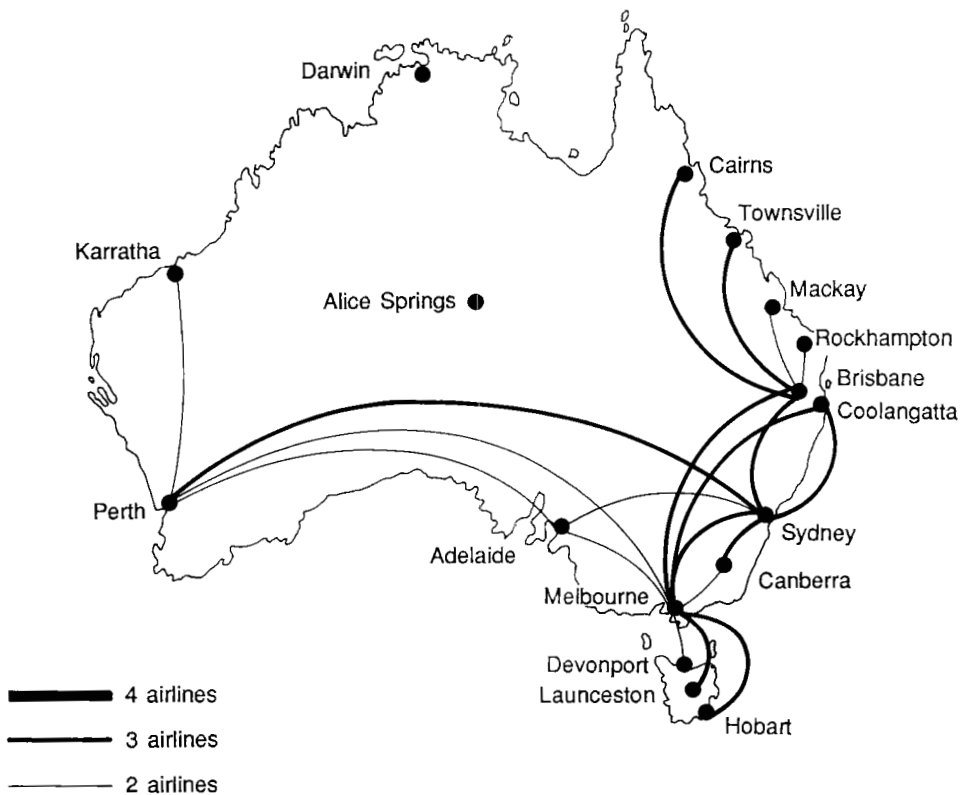


Source DoTC (1991c).

Figure 3.5 Airline market shares – passengers, September quarters 1988 to 1991

passengers. The airline intends to initially increase competition on Western Australian and Tasmanian routes. *Australian Aviation* (July 1991) reported that Transcontinental proposed to commence operations in Western Australia by March 1992, with east coast services in place by late 1992.

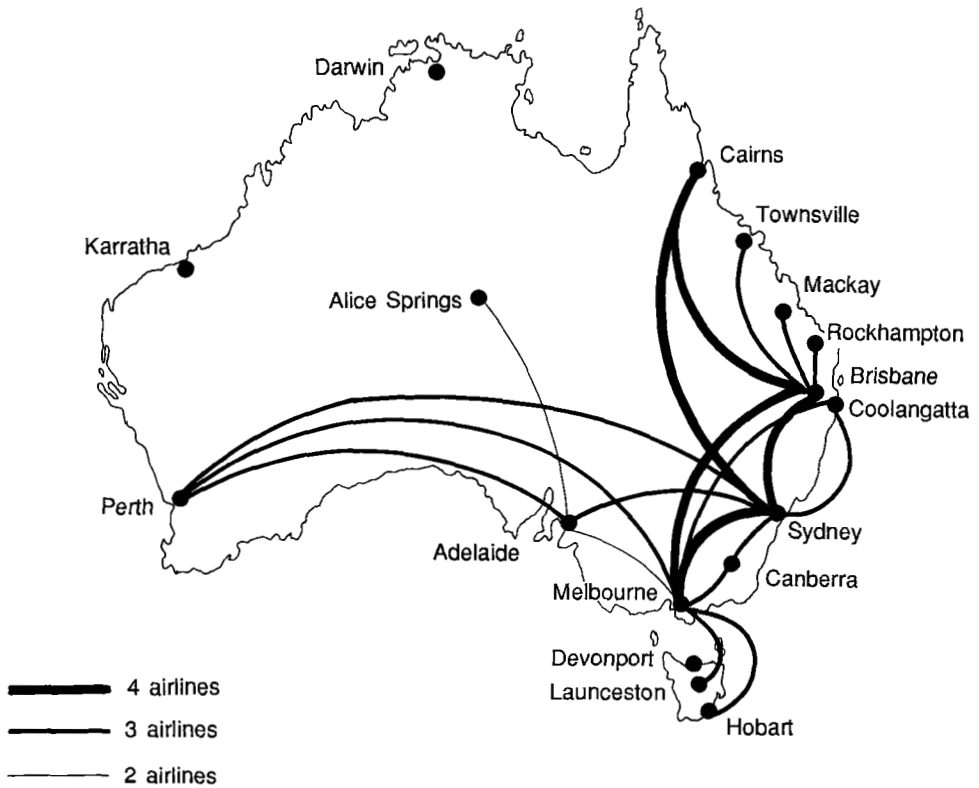
AAA Airlines plans to initially operate a fleet of three MacDonell Douglas DC9-30 aircraft on 120 services during the week between Sydney and Melbourne. On weekends and public holidays two of the aircraft will be chartered out. AAA Airlines intends to put 12 600 economy seats into the Melbourne–Sydney market each week, an increase of approximately 14 per cent on the capacity on that route, based on October 1991 passenger data. The airline expects to raise 70 per cent of its capital from pilots and 30 per cent from a group of Sydney investors. AAA Airlines plans to take delivery of its first aircraft in early 1992.



Note Ansett, Ansett WA and Ansett NSW are treated as one operator.

Source DoTC (1991a).

Figure 3.6 Number of domestic airlines on each of the top 20 routes in 1988



Note Ansett, Ansett WA and Ansett Express are treated as one operator.

Source DoTC (1991a).

Figure 3.7 Number of domestic airlines on each of the top 20 routes in 1991

BARRIERS TO ENTRY

A key to the future structure, conduct and performance of the domestic airline market is the prosperity of new entrants. That is, a critical structural feature of a market is the height of industry entry and operational barriers, which will determine whether existing and potential new entrants can survive and thrive.

The United States experience is discomfiting on this issue, as virtually all new United States airline entrants have fallen by the wayside. Although the economic literature prior to deregulation in the United States generally asserted that there were no significant entry barriers or disadvantages for small airlines, experience and subsequent research has shown otherwise.

The sources and importance of entry barriers in the Australian setting are now examined, with reference to the United States situation where relevant.¹ Barriers to entry can be classified into three broad categories: natural (or economic) barriers; firm-created barriers; and government-created barriers. Each will be discussed in turn.

NATURAL BARRIERS TO ENTRY

Scale economies

There are a number of natural barriers to entry which may affect the decision of new airlines to commence operations on Australian domestic routes and the success of those who do enter. (Natural barriers are those intrinsic to the technology at hand.) The primary barrier in this category is the existence of scale economies, whereby larger firms can produce at lower cost than smaller firms. A related technological barrier is the extent of capital required to enter: industries where capital requirements are substantial — for example if large investment in plant and equipment is required to enter — also tend to be those where scale economies are present.

Although the economic literature influential in the debate on deregulation in the United States pointed to no scale economies in aviation, subsequent research has shed important clarification on the matter. As discussed in more detail by Morrison (1991), there is now clear evidence that economies of aircraft size and economies of density exist.

Economies of aircraft size exist as larger aircraft are cheaper to operate per available seat kilometre than smaller aircraft. For example, Bailey, Graham and Kaplan (1985) show that for a 1000-mile trip, cost per revenue passenger mile is 18 per cent lower for a 371-seat DC10-10 than for a 115-seat DC9-30. These economies exist because larger aircraft can generate additional capacity without proportionate increases in crew size, fuel use, and the like. In addition, where an aircraft increases its seating capacity, fixed costs such as ground and station handling can be shared among a larger number of passengers, reducing available seat kilometre costs.

Added passengers in a corridor greatly facilitate realisation of these economies without seriously sacrificing flight frequency. This gives rise to economies of density, in that more passengers travelling on a given route result in lower costs.

1. Barriers to entry have been characterised in two ways. One approach suggests that barriers to entry are any costs faced by new entrants. The other approach is a more narrow definition which suggests that any cost faced by new entrants to the market which were not faced by incumbent firms constitutes a barrier to entry. For the present purposes, a broader definition is used, identifying any factors which make successful new entry difficult.

Caves, Christensen and Tretheway (1984) found that if the number of passengers increases by 10 per cent, holding the route structure constant, costs increase by only 8 per cent.

The issue then becomes: to what extent do new entrants, by nature smaller than their established rivals, suffer a cost disadvantage? Otherwise stated: to what extent does having a larger network facilitate increased traffic densities and the concomitant lower costs?

In the United States, with a comparatively large number of cities, the hub-and-spoke system is a formidable tool in realising economies of density. Rather than being offered direct service, passengers from a given city are all flown to an intermediate hub, where they then change planes, join passengers from many other origins, and proceed to their final destinations. Thus, density between relevant city pairs is greatly enhanced.

For example, assume an airline services passengers flying from five different origin cities, located somewhat near each other, to five destination cities, also located somewhat near each other as shown in figure 3.8. Some passengers from each of the five origin cities fly to each of the five destination cities, so that there are 25 city pairs in the route system and 25 flights would be needed to service all passengers who wished to fly at a given time. A hub-and-spoke system entails establishing a city located centrally between origin and destination cities as a hub. Flights from each of the origin cities would proceed to the hub, and, after passengers change planes, flights would proceed to each of the destination cities. With such a hub-and-spoke system, only ten flights would be needed to service all passengers who wished to fly at a given time. In effect, by initiating a hub-and-spoke system, the airline has achieved densities 2.5 times greater.

Importantly, larger firms, with more origin and destination points in their networks, can realise greater benefits from hub-and-spoke systems in facilitating economies of density and lower costs. With reference to the previous example, a firm with ten origins and ten destinations could boost densities fivefold by switching from direct flights to a hub-and-spoke system. The relatively greater cost advantage accruing to larger firms from adoption of hub-and-spoke systems has proven to be a serious problem for smaller firms, including new entrants trying to get a foothold in the market.

However, the situation is very different in Australia. Given the relatively small number of cities, which are widely dispersed and not geographically amenable to hub-and-spoke networks, the United States style hub-and-spoke system does not confer advantages. Moreover, a new entrant such as Compass can enter with a small number of aircraft, serve a small number of cities, and realise substantial traffic densities.

Another potential benefit of increased network size in facilitating density economies is that additional routes can be used to feed traffic onto core routes. In the Australian system, routes other than the top 20 or 30 are very thin and

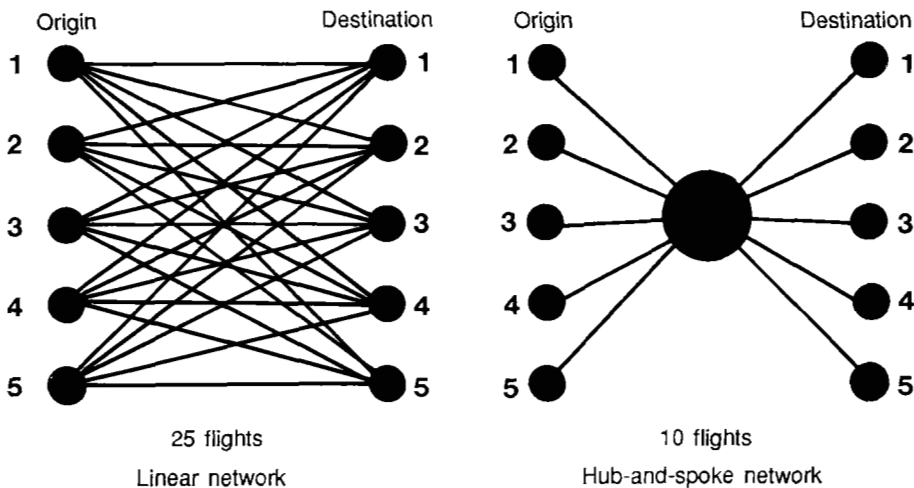


Figure 3.8 Benefits of a hub-and-spoke network

because of this they provide only a modest amount of feeder traffic to the top routes and have relatively high costs. Therefore, unlike the United States, firms can operate on only a small number of routes in an integrated system and not suffer from cost disadvantages. Indeed, networks such as Compass' can be advantageous in realising economies of density and aircraft size vis-a-vis Ansett's and Australian's more comprehensive networks.

Thus, new, smaller carriers in Australia do not appear to be at a cost disadvantage compared to established larger players. Indeed, new entrants may well be able to achieve lower costs if existing firms are locked into particular cost structures. Compass, for example, has been able to negotiate innovative pilot awards after the pilots' dispute, which have not been duplicated by Australian Airlines or Ansett Australia.²

Compass has also been able to construct a route network and operating practices to reflect the current competitive environment, whereas the major airlines have had the perhaps more difficult task of rationalising existing services and fare

2. Under the Industrial Relations Commission's award which applies to Ansett and Australian, A300 pilots are paid a base salary of about \$125 000 per year and are paid 1/600th of this salary for every flying hour over 55 hours per month. Compass Airlines' A300 pilots, which are covered by a different award, are paid a flat rate of \$125 000 per year regardless of hours flown.

structures from the period of regulation. For example, Compass has achieved a competitive advantage by employing Melbourne as a centre of operations so that economies can be achieved by concentrating aircraft servicing at one point while also facilitating more efficient use of crews. The incumbent airlines may well have to close or rationalise facilities in order to achieve similar efficiencies.

Capital requirements

Capital requirements have been identified as a barrier to entry to many markets. It has been suggested in Tirole (1989) that entrants may have trouble finding finance for their investments because of the risk to creditors. In the case of Compass, the airline floated \$50 million on the Sydney Stock Exchange and was oversubscribed by \$15 million.³ A number of institutional investors were reportedly among those providing funds for Compass.⁴

One aspect which facilitates entry into the aviation industry is that many of the major capital components such as aircraft and terminals can be leased at market rates. Although it is unclear whether the enthusiasm generated during the Compass float could be attained by other potential entrants attempting to raise funds, the Compass experience suggests that raising funds in the order of \$65 million needed to establish a comparable airline is achievable.

Innovative approaches have been suggested by several potential entrants. AAA Airlines, for example, proposes to develop an employee ownership strategy where the pilots working for AAA will have 70 per cent of the company's equity base through a trust fund. AAA also proposes cutting capital requirements through the use of older, less expensive aircraft (AAA Airlines 1991).

In summary, there do not appear to be serious natural entry barriers into the Australian domestic airline industry.

FIRM-CREATED BARRIERS TO ENTRY

There are a number of barriers to entry in which competing firms play a role. In some cases firms may pursue a deliberate blocking strategy towards entrants. In other cases possession of a key resource is sufficient to deter entry.

3. The share placement occurred in June 1990 and Compass shares were listed on the Sydney Stock Exchange on 5 July 1990.

4. The Commonwealth Superannuation Fund Investment Trust, the Queensland Industry Development Corporation, AMP and Prudential Assurance were reported in the *Australian* (7 June 1990) as contributing a total of \$19 million. Sarich Corp and AMP were reported in the *Canberra Times* (5 July 1990, p.15) as holding 7.6 per cent of Compass's shares and BT Australia was identified as another investor.

Terminals

Terminal facilities are crucial to the development of domestic aviation in a deregulated environment. In 1990 23 million passengers passed through the top ten airports, representing 90 per cent of all passenger movements in Australia. Table 3.2 shows the breakdown in passenger movements among these airports.

TABLE 3.2 DOMESTIC PASSENGER MOVEMENTS AT MAJOR AIRPORTS

<i>Airport</i>	<i>Passenger movements ('000)</i>	<i>Percentage of all movements</i>
Sydney	6 690	27.0
Melbourne	5 904	22.8
Brisbane	3 486	13.4
Adelaide	1 864	7.2
Perth	1 399	5.4
Canberra	949	3.7
Coolangatta	892	3.4
Cairns	703	2.7
Hobart	535	2.1
Alice Springs	447	1.7
Top ten airports	23 171	89.4
Total Australia	25 930	100.0

Source DoTC (1990).

Clearly, access to adequate terminal facilities is a major issue for new entrants. Over 63 per cent of all passengers pass through Sydney, Melbourne or Brisbane and new entrants wishing to engage in substantial competition with Australian and Ansett have to gain access to at least those three airports.

In December 1987, immediately prior to the handover of airport management to the Federal Airports Corporation (FAC), the Federal Government renegotiated the lease arrangements with Australian and Ansett for terminal facilities at Sydney, Melbourne, Perth, Adelaide, Launceston and Coolangatta airports.

One of the more significant aspects of the new lease conditions for Sydney is that they cover not only the existing terminals, but also significant expansion land (CofA 1987). Additionally the term of the Sydney leases is for 20 years for the premises and eight years for the expansion land. An option to renew of around 20 years for the expansion land where it has been developed, together with as much of the balance of the premises as are operationally connected with the new development, is also specified in the lease.

These arrangements may appear to give the incumbent airlines leases with options for around 28 years for all terminal space and land for terminal development at Sydney. However, the FAC will soon complete development of an apron area at Sydney large enough to cater for the operation of six domestic jets. This new apron area complements feasibility studies undertaken by the FAC for common user terminal facilities.

In order to provide some facilities for new entrants to the interstate aviation market, the leases required Ansett and Australian to provide gates at their terminals to new entrants, as follows: Sydney and Melbourne, two each; Adelaide, Perth and Coolangatta, one each; and Launceston one by Ansett only. The FAC would be able to provide accommodation for new operators in existing facilities at Brisbane and Hobart (Collins 1990).

Priorities between new entrant airlines were established according to the services which each airline intended to offer, with priorities within categories being determined by the Minister. The incumbent airlines were instructed to negotiate with third parties according to the priority list of new entrants.

Where facilities have not been taken up, the airlines are required to make those facilities available to any third party carrier requesting them. This ensures that if the top ranking new entrants fail to commence operations, others can come in and take up the terminal facilities.

The adequacy of terminal facilities is clearly one aspect which is crucial to the successful development of a deregulated aviation industry. The lease provisions have allowed Compass access to a limited number of terminals and so has obviously not been an insurmountable entry barrier.

However, from Compass's perspective there has been a number of problems. Having access to only two terminals at Sydney and Melbourne purportedly forced Compass to use wide-bodied aircraft. There have been numerous disputes about sub-lease conditions, delays in gaining terminal access, and the like. For example, the charge to be paid to Australian for terminal access has been disputed and is now being settled by arbitration. Although the limit of two terminals in key airports may well be a binding constraint on Compass's growth at some point, terminal access has been adequate to establish a viable airline with an arguably advantageous route structure comprising the high density city pairs serviced by wide-bodied aircraft.

Currently it is possible for the lessees (Australian and Ansett) to operate fewer services through each gate in the terminal than the sub-lessees, indicating that the resources use is not uniformly distributed. The FAC has indicated that further terminal development will be on the basis of a demonstrable need for gates. In this situation they could well point out the higher utilisation rates at new entrant gates and say that until Ansett and Australian reach these rates the FAC would be reluctant to expand terminal facilities. In the medium term, expansion land has been leased to the major carriers, so that further terminal development at the

main airports will be closely linked with their operations. This means that in the medium term new entrants will probably have one of their competitors as their landlord. Given that the leases to the incumbent airlines operate at least until 2007, while the compulsory provision of sub-leases for the new entrants expires in the year 2000, an additional question is: what facilities will be available for new entrants in the 21st century?

Terminal access looks to be a more serious issue for potential airline entrants than it has been for Compass. There is basically room for only one more new entrant at major airports, in so far as Ansett's terminals remain available. Even this one entrant may have additional problems, as Ansett has purportedly offered two gates at Melbourne 1.5 kilometres apart.

Moreover, while there is provision for other new entrants to take up available facilities if the front runners drop out of the race, there is no provision to cover a situation where negotiations between a landlord airline and a prospective tenant airline drag on, effectively denying a potential entrant an opportunity to take up the facilities provided to new entrants.

In summary, the terminal access available to new entrants, although limited, has allowed an actual entrant and does make possible the potential entry of another new carrier. Provision of this degree of access has greatly facilitated the establishment of structural conditions to achieve an adequate degree of competition under deregulation.

Horizontal and vertical integration

Horizontal and vertical integration between existing firms can in some cases enlarge barriers to entry for new firms. The airlines' acquisition of feeder airlines, holiday destinations and travel agencies could be seen as attempts to develop greater access to the demand for airline services. By acquiring firms in industries which generally supply passengers to the domestic aviation market, the airlines could be seeking a competitive advantage over new entrants. The question arises as to what extent these acquisitions form barriers to entry.

Linkages with other airlines

One potential barrier is the linking together, by ownership or agreement, of markets which are providing airline passenger services but which are spatially separated (different city pairs). The main objective of such a strategy from an airline's point of view is to enhance the possibilities that travellers will feed into the airline's network. If successful, such a strategy can enhance densities on major routes and reduce the costs of services provided on a seat kilometre basis.

Actual ownership of feeder airlines is one option; another is to attract customers by making the network connections seamless — providing co-ordinated schedules, checked-through baggage, code sharing, single ticketing and joint-tour products, single terminals and so on.

Although the major airlines are greatly integrated with feeder airlines, and have increased this integration since deregulation, there does not appear to be any evidence that lack of feeder airline ownership constitutes a major barrier to entry. Prior to deregulation, the major Australian domestic airlines already had links with both regional and commuter airlines and with international airlines either by ownership or alliance. Of the 45 Australian commuter carriers existing before deregulation, at least 20 were affiliated in some way with Ansett and 15 with Australian (AFR 1990a). Deregulation merely added to the incentives for such integration.

The takeover of Eastwest by TNT-News Corporation in July 1987 could be deemed to be the first strategic response to imminent deregulation. More recently, Australian has acquired full ownership of Eastern Australia Airlines, Sunstate Mildura and Sunstate Queensland and launched a new regional airline, Australian Airlink, to fly some of its low density routes along the Queensland coast as well as Cairns to Darwin, Yulara and Alice Springs. Figure 3.9 shows the current ownership structure of Australian domestic passenger airlines.

Internationally, Australian has entered into a close relationship with United Airlines and has had commercial agreements with Air New Zealand, Singapore Airlines, UTA, Canadian Airlines International and British Airways. Ansett had a long-standing relationship with Qantas which expired early in 1991 and has been reported as negotiating with several foreign airlines.

Integration with travel agents and firms providing complementary products

Airlines may also opt for linking together, by ownership or agreement, markets which form an input-output or output-output sequence. For example, links may be formed between an airline and inputs which might otherwise be purchased, such as aircraft leasing services, travel agents or computer reservations systems. Links may also be formed between airlines and services which may be used sequentially, such as hotels, hire cars and tourist resorts. Once again, such a strategy can have benefits for an airline's economies of densities and lead to improvements in load factors.

Ownership of travel agencies is perhaps the most serious barrier of this type. Ansett Australia and Australian Airlines have sought greater market access by purchasing and forming strategic alliances with travel agencies since deregulation. Ansett has reportedly taken a significant interest in the third largest ticket consolidator, Metro Travel, replacing Australian as the preferred domestic carrier. Ansett has bought the Traveland chain of agencies and joined forces with Coles-Myer to create another sales network. In August 1990, Coles-Myer-Ansett Travel purchased the ANZ Bank's extensive travel business with 40 outlets, making it one of Australia's five largest travel agency groups.

In September 1990, Australian retaliated by purchasing Westpac Travel, with 42 outlets and an annual turnover of \$200 million, predominantly from corporate accounts (AFR 1990b). Australian has moved to develop closer relations with a number of other travel agents, particularly large volume agents and consolidators

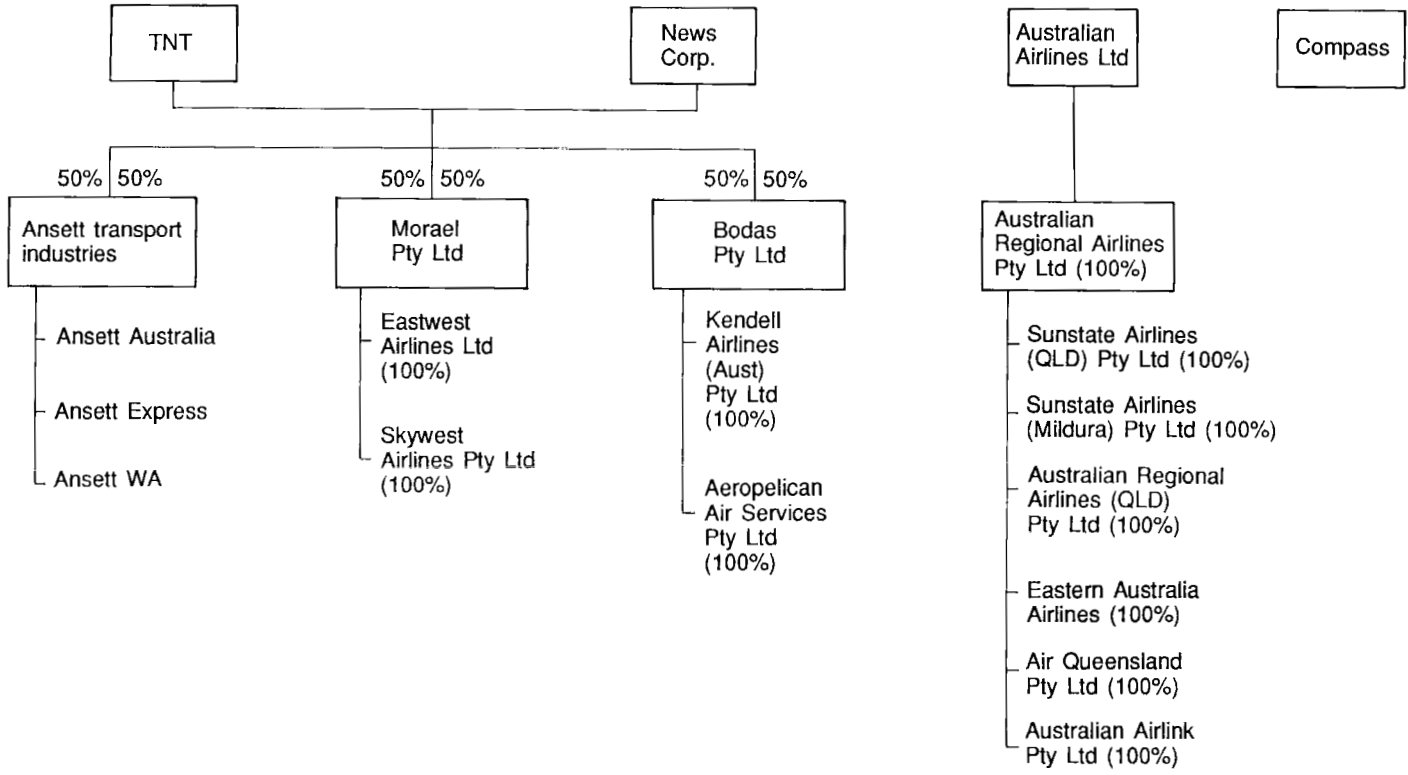


Figure 3.9 Ownership structure of Australian domestic passenger airlines

who provide tickets to small travel agencies not linked to computer reservations systems. In particular, travel agencies which are owned and operated by an airline, and may be perceived by the public as independent, could provide an important advantage to that airline.

In October 1991, Compass doubled its commission for travel agents selling Compass class tickets to 20 per cent, four times Ansett and Australian's usual commission. It also boosted its commission on discounted tickets from 9 per cent to 12.5 per cent (DCN 1991). These initiatives provide a powerful incentive for travel agents to sell Compass tickets.

Ownership of firms in related industries does not necessarily constitute a barrier to entry for new airlines. What is more difficult to determine is whether the operational policies of these related firms are developed in a prejudicial manner to new competitors. At this stage there does not appear to be much evidence to support that hypothesis.

Does the airlines' ownership of holiday destinations constitute a barrier to entry? It may be an inducement for holiday makers to pick up a package prepared by the airline in conjunction with the holiday resort, but Compass has demonstrated that ownership is not a prerequisite for developing attractive holiday packages.

Strategic alliances

Strategic alliances may provide an alternative avenue to integration in facilitating entry barriers. Strategic alliances have been developed with overseas carriers, regional and commuter airlines, hotels, car rental agencies, and travel agencies. Australian, for example, entered into arrangements with Hertz for preferential rates and simplified hiring arrangements for Flight Deck members, while Ansett has a preferential rates arrangement with Avis for Golden Wing Club members.

These affiliations are more loosely based than equity holding and therefore there must be financial advantages to both parties. For this reason it is unlikely that many firms would willingly enter into sole agencies with the airlines and ignore business being generated by new entrants. Certainly Compass has a number of arrangements with firms in the travel and hospitality industries.

Compass has also endeavoured to develop a number of strategic alliances. For example, it has signed a joint marketing agreement with Budget Rent-A-Car which is designed to develop fly-drive packages, including hotel accommodation and with other airlines, developed airfare and accommodation packages to Cairns in conjunction with the Queensland Travel and Tourist Corporation. Compass also has opportunities for 'feed' from tourists who book through the Sabre/Fantasia Computer Reservations System.

Frequent flier programs

The most recent airline tactic arguably intended to heighten entry barriers is the introduction of frequent flier programs. The experience in the United States suggests that frequent flier programs add to yield erosion. However, the carriers generally regard them as an expensive, but successful, marketing tool (Brenner, Leet & Schott 1986). Such programs have clearly proven to be a major barrier to entry for new entrants in the United States and have attracted criticism from the United States General Accounting Office because of their potentially anticompetitive nature (Avmark1991). Frequent flier programs are an example of what is known as a rebate-coupon device, which has the effect of deterring entry by creating the need for a new entrant to establish a network of a certain size.

Recent experience in Australia suggests that Compass has not followed Ansett's and Australian's lead in developing frequent flier programs, but instead seeks to offer more lucrative fare discounts to passengers who would normally pay full fares.⁵ The fact that Compass, despite a limited route structure, can compete for approximately 60 per cent of domestic passengers means that it is less vulnerable to frequent flier programs than its counterparts in the United States.

In conclusion, firm-created barriers to entry generally do not appear to be insurmountable impediments to new entrants in Australia, with ownership of travel agencies perhaps the most serious problem for existing new entrants, although the initial capacity constraints imposed by the terminal leases could inhibit further expansion of domestic aviation by new carriers.

INSTITUTIONAL BARRIERS TO ENTRY

Currently international carriers, including Qantas, cannot compete on Australian domestic routes for passengers. Unlike the situation which prevails in the United States, where the same carriers serve both international and domestic markets, Qantas is not permitted to carry domestic passengers (interlining rights excluded), while Australian domestic carriers are not permitted to serve international markets. This important entry restriction could be relaxed if conditions warranted, and provides a further mechanism to increase the level of competition should the market structure evolve in a way that competition proves inadequate.

5. Compass offered two free tickets with every Compass class purchase to the same destination. Compass claimed its competitors' frequent flier programs would only offer the same free flights after 24 return trips.

CHAPTER 4 AIRLINE COMPETITION UNDER DEREGULATION

As discussed in the previous chapter, the structure–conduct–performance paradigm posits that alterations in market structure will have major consequences for firm conduct and, in turn, market performance. Moreover, the theory suggests that the specific changes in structure which have occurred since deregulation — the Compass entry bringing about a decrease in market concentration, an increase in capacity, and an increase in firm heterogeneity — would be expected to greatly intensify rivalry among firms. This chapter examines airline rivalry, both longitudinally, over the lead-up to and during the first year of deregulation, and with a cross-sectional analysis of discount fares during the intense June–July–August skirmish. A chronology of the events comprising the developments in competition is at appendix I.

PRICE COMPETITION

The pricing policies pursued by the airlines have been a major feature since deregulation. A number of stages in the development of fares can be identified. These include the fare initiatives taken by the airlines before deregulation, the discounting during January to fill seats in this traditional period of low demand, the major sustained discounting campaign which began in late June and the airlines' ongoing reaction to the recession. From this longitudinal assessment the impact of Compass's entry into the market in intensifying competition is clear.

In addition to this approach, a cross-sectional regression analysis of fare discounting during the height of the June–August fare war is presented to test more formally the hypothesis that structural features such as the number of competitors and the presence of Compass are primary determinants of the intensity of price competition.

LONGITUDINAL ANALYSIS OF FARE DISCOUNTING SINCE DEREGULATION

Before the pilots' dispute, both Australian and Ansett had an almost identical schedule of discounts. These discounts were characterised by their long-term, stable nature, providing discounts of between 15 per cent and 45 per cent. Conditions typically required advance booking, minimum and maximum stay

away periods, seat availability limitations, cancellation penalties and, on the 45 per cent discount fare, no choice by the traveller of the particular flight, only the day of the flight. Eastwest had a slightly different discount schedule.

Lead-up to deregulation

In early 1990, as the effects of the pilots' dispute diminished and the airlines began to prepare for deregulation, the number and types of discounts began to increase and a number of discounting strategies were introduced:

- time deadlines were set on the availability of discounts, which had previously been open-ended;
- specific market segments were targeted, such as the over 60s;
- discounting strategies varied between the airlines (not simply copying each other);
- discounts were provided only on certain flights; and
- off-peak, late evening and night flight discounts were introduced by Australian and Ansett.

Post-deregulation discounting

The January campaign, introduced by Ansett on 1 January 1991 with discounts of up to 61 per cent and followed (and extended) by Australian, was the first specific discount 'campaign' instituted by an airline to boost sales over a wide range of routes in a quiet period exacerbated by an increase in capacity.

The May 'Recession Busters' campaign, instituted by Compass on 3 May and followed six days later by Australian and Ansett, was the first instance of an airline overlapping an initial discount offer with a second, shallower, but longer, offering. It was also the occasion of the first super cheap same-day spot sale (\$100 one-way tickets for travel from Sydney or Melbourne to Perth).

The mid year discount war, which was begun on 21 June by Compass, was not fundamentally different to the previous discount campaigns. It was no deeper than the May campaign, which had offered discounts of up to 70 per cent and \$100 spot fares to Perth, nor was it any wider than the January fare war, with Ansett then offering discounts on 150 routes (followed by Australian) and Ansett Express joining the discounting. However, it did bring together the best features of the previous two campaigns. It also operated for a longer period than the previous campaigns, with the sale period lasting (with extensions) from late June into September. Previous sales had lasted for no more than a month. The period of use (again with extensions) was nine to ten months, compared with the May campaign which provided a 12 month period of use. Also the conditions were similar to the May fare war, with tickets to be paid for within 72 hours of booking and non-refundable.

One of its most significant features was its intensity, with a greater number of fare changes than previously and more overlapping of a series of mini discount battles over the period June to August. It was a natural development from the earlier

campaigns, with increasing sophistication being brought to bear in areas such as width of discounting (in terms of the number of routes affected), the increased use of the one-off sale of seats on a particular flight, targeting of business groups with shallower discounts (particularly by Compass, who had less to lose through diversion of premium fare business passengers than the other airlines) and incremental increases in width, depth and duration of discounting.

Discounting continued into September and October, although initially not with the same intensity as in July and August. However, discounting became more intense on 3 October when Ansett and Australian commenced a further round of reductions. Compass refused to be undersold and dropped its fares still further, to be then matched by Ansett and Australian.

It is notable that even at the time of finalising this report in November 1991, Compass has triggered a further round of discounting which has been matched by Australian and Ansett. This discount war has seen the deepest discounts to date (Sydney to Melbourne or Brisbane and Melbourne to Adelaide for \$100 return), indicating that short term deep discounting in slack periods may well become a feature of competition in the industry.

Experience so far suggests that discounting will continue in a rather unpredictable pattern, with periods of intensity and lulls, and that expectations of increases in demand will not necessarily preclude discounting campaigns.

Analysis of trends in discount wars

Over the past year, discounting has changed in a number of ways, not necessarily just as a result of deregulation. First, discounts have become deeper, given that highly restricted 45 per cent discounts on full economy fares were generally the best available prior to deregulation, while less restricted discounts of 60 to 70 per cent were available during 1991.

Second, there has been an increase in the variety and innovation of fares available to the public, such as the two for one offer from Compass and the more recent frequent flier programs. Also, the airlines have not always followed each other in discounting, but have sometimes provided different forms of discounting.

Third, Ansett, Australian and Compass have each been responsible for some of the discounting initiatives. In contrast, Eastwest does not appear to have taken the lead to the same extent.

Fourth, the number of routes on which discounts have been available has fluctuated. In the January discounting battle the range was quite wide, not restricted to the routes serviced by Compass. However, in the early stages of the June discounting the range was restricted largely to the Compass routes, but later was widened. Also, in the latter campaign, routes to Adelaide were targeted, presumably in anticipation of Compass's entry into the market.

Fifth, restrictions on time of purchase for the deeper range of discounts have been imposed. Whereas prior to deregulation a schedule of discounts was available indefinitely (those discounts are largely still available), the general practice now is to make new discounts available for short periods. This presumably allows the airlines to maintain tight control of fares and to make quick changes to fare structures in response to changes in demand, marketing initiatives by other airlines or other factors. It also allows continual introduction of new discounts with their attendant publicity and enables the airlines to lock in future demand and increase cash flow.

Sixth, restrictions on the periods within which the flight must be taken have been imposed and vary widely, from one day to one year, depending upon the type and depth of the discount. Discounts designed to fill particular or anticipated pockets of empty seats are often deeper and have greater restrictions upon them (for example, \$100 one-way discounts between Sydney and Perth).

Seventh, discounting promotion has changed from an emphasis on the percentage of the discount to an emphasis on the amount saved, and particularly on the amount of the actual discounted fare.

As with the discount regimes operating before deregulation, there has been a continuation of restrictions on ticketing (usually now within 72 hours of booking), rebooking and cancellations, with most fares excluding refunds and limiting changes to travel plans.

Motivation for increased emphasis on discounting

A number of factors have influenced the actions (and reactions) of the airlines in the discounting campaigns. Reduced demand in the economic recession has induced each airline to maintain its overall customer base at the expense of its competitors. However, as the recession has extended across the whole period of deregulation, it does not adequately account for the increased intensity of discounting through the first ten months of 1991. The airlines did not undertake this level of discounting during previous recessions.

Allied to this has been the dramatic increase in domestic airline capacity, from around 360 million available seat kilometres (ASKs) per week in mid October 1990 to about 530 million ASKs in mid October 1991 (DoTC 1991b), an increase of about 45 per cent. About 40 per cent of the increase has been a direct result of Compass's entry.

Seasonal variations have had some impact upon particular discount campaigns. The January clearance sale instigated by Ansett certainly fell into this category, as the airline sought to fill seats in a traditionally quiet month. August and September were also described by an Ansett spokesman (Wahlquist 1991) as usually pretty flat.

However, it is the increasingly competitive nature of the market which is having the most impact upon the airlines. Much of the competition has resulted from the entry of Compass, as the airlines strove first to prepare for its arrival and then to counter its manoeuvres. It was Compass which contributed a significant share of the increase in capacity, and then used a variety of marketing strategies and tactics to fill its aircraft. Both Ansett and Australian have also taken up the challenge, competing vigorously not only with Compass but also with each other over their entire networks.

CROSS-SECTIONAL ANALYSIS OF WINTER '91 FARE DISCOUNTS

The longitudinal analysis discussed above suggests that the market has been more competitive since deregulation. In particular, it appears that Compass, by adding to the number of competitors, adding capacity and providing a 'maverick' in the market has had a major impact across a number of routes, as predicted by the theory. To shed further light on the importance of these structural features, a cross-sectional analysis of discount fares was undertaken.

Data and methodology

The basic hypotheses are that the number of competitors, and the presence of Compass, on a route will have significant effects on the level of discount fares: as the number of competitors increases, fares are expected to be lower; when Compass is present on a route, fares are also expected to be lower.

These hypotheses were put to a formal test through regression analysis using a cross-sectional sample of airline routes. In assessing the impact of competition on fares, the distance of the route and the number of passengers on the route were included as control variables, primarily to reflect cost variations with stage length and density. The model had the general form

$$\log(\text{FARE}) = \log(K) + A. \log(\text{DIST}) + B. \log(\text{COMP}) + \\ C. \log(\text{YDUM}) + D. \log(\text{PAX})$$

where the dependent FARE variables are, alternatively

DF	Maximum discount fare
DF/K	Maximum discount fare per kilometre

and the independent variables are

DIST	Great circle distance
COMP	Number of competitors on the route
YDUM	Compass dummy variable
PAX	Number of uplift-discharge passengers
K	The estimated constant term in the equations

The sample consisted of the top 100 city pairs by passenger uplifts and discharges for the year ending 31 December 1990. These routes represent a diverse range of operating conditions for the airlines and accounted for 12.9 million uplifts and discharges or 99.6 per cent of all passengers carried in that year. The routes range in density from Melbourne–Sydney with 2.52 million uplifts and discharges to Broome–Darwin with 3482 uplifts and discharges. The distances flown on these 100 routes were between 92 kilometres and 3436 kilometres. The average maximum discount offered across these routes was 43 per cent of the standard economy fare.

The fare chosen as the dependent variable was the best available discount fare during the June–July–August fare war. This fare skirmish, as the most intense to date, clearly reflects the atmosphere of the deregulated marketplace. In addition, the relative stability of these discount fares over a more than two-month period facilitated data gathering.

In one pair of regressions the dependent variable was regressed against distance, the number of competitors, a Compass dummy variable and the number of uplifts and discharges within the flight. In the second series the number of uplifts and discharges was dropped from the equation. The results of these regressions are shown in table 4.1.

Summary of results

The results provide support for the importance of competition in determining fares. The coefficient for the number of competitors was negative and statistically

TABLE 4.1 REGRESSION RESULTS — DISCOUNT FARES

<i>Dependent variable</i>	<i>Constant term</i>	<i>Great circle distance</i>	<i>Number of competitors</i>	<i>Compass dummy</i>	<i>Uplift-discharge passengers</i>	<i>R²</i>
Discount fare	1.99039 (0.2564)	0.52822 (13.0169)	-0.21323 (-3.7990)	-0.25420 (-2.6123)	-0.03620 (-1.7764)	.7321
Discount fare	1.58110 (0.2593)	0.53915 (14.9282)	-0.25822 (-5.0980)	-0.30559 (-3.4542)7232
Discount fare per kilometre	1.99039 (0.2564)	-0.47179 (-13.0619)	-0.21323 (-3.7990)	-0.24520 (-2.6123)	-0.03620 (-1.7764)	.7489
Discount fare per kilometre	1.58110 (0.2593)	-0.46085 (-12.7603)	-0.25822 (-5.0980)	-0.30559 (-3.4542)7406

.. Not applicable

Note All bracketed figures are t-statistics except for those under the constant terms which refer to the standard error.

Source BTCE estimates.

significant, indicating that the degree of discounts is a function of the number of competitors operating on each route. Even when controlling for the effect of Compass, additional competition results in lower rates. This indicates that competition between the two incumbent airlines is resulting in significantly lower discount rates. The statistically significant negative coefficient on the Compass dummy variable implies that the presence of Compass has an additional impact on discount fares, over and above merely adding one more competitor on a route.

The sign on the distance independent variable was as expected, positive and significant when the fare was used as the dependent variable, negative and significant when the fare per kilometre was used. To the extent that fares reflect costs on particular routes, the fare taper present in the sample provides evidence of economies of stage length.

The coefficient on number of passengers was negative, but was only marginally significant. Again, to the extent that fares reflect costs, the lower fares in denser markets provide an indication that airlines are adjusting prices to reflect economies of density.

THE TRADE-OFF BETWEEN PRICE AND SERVICE QUALITY IN THE BUSINESS MARKET

Service quality and price are the two major factors determining consumer choice for airline travel. The balance between these two is different for the business and non-business markets. There is no evidence that the balance has shifted for the non-business traveller, who has always been price sensitive and has predictably reacted to the discounting battles. However, there are indications that this balance has shifted in the business travel market in recent months.

The historical perception for the business market had been that flexibility of travel plans and other elements of service quality were more important than price and that business travellers were prepared to pay a significant premium in order to maintain that quality of service. Since deregulation the airlines have continued to pay attention to service quality provision, competing in this arena in order particularly to attract the business traveller, although all airline passengers have benefited to some extent. The arrival of Compass on many business routes with its spacious one-class cabin may have prompted some of these initiatives, particularly the upgrading of business class by both Ansett and Australian in order to provide a product sufficiently different from Compass to attract the service-oriented business market.

Details of the initiatives taken by the airlines to compete for patronage through service quality are discussed in detail in chapter 6 and in appendix II.

However, in addition to competition in service quality, deregulation has also seen the new phenomenon of discounting aimed at the market for business travellers. This commenced in July 1991 when Compass offered discount 'Freedom Fares'. These tickets were available for a month and useable for nearly a year, without

advance specification of day or time of travel. The Sydney-Melbourne fare was set at \$95, slightly higher than the maximum discount fare of the time but significantly less than Ansett and Australian's standard economy fare of \$229. Australian followed, as did Ansett when Compass introduced a second, shallower round of discounts ('Business Pass') for the business market (Sydney-Melbourne \$125). The introduction of frequent flier programs did not see the end of such discounting, with Compass introducing books of discounted tickets, available indefinitely, and Australian introducing a discount regime similar to the Business Pass and available for purchase until March 1992.

Another indication of the trade-off between price and service quality in the business market is that business travellers may be taking advantage of other discounts which require significant concessions in the area of booking flexibility — concessions not previously thought feasible in that market. A recent report (Dorman 1991) suggested that a high percentage of business travellers were travelling on discounts and that corporations were actively hunting for cheap fares, even where this meant making advance bookings.

As Dorman suggested, this trend seriously threatens the strategies of the major two airlines, particularly Ansett, as it upgraded business and first class and reduced the flexibility of seating arrangements at the expense of economy class. It is much more to the advantage of Compass Airlines, which has only one class of seating and has adopted a different long-term strategy of actively seeking business travellers with moderate, across-the-board, discounting, a generous seat pitch and subtle marketing techniques such as seating 'suits' at the front end of the plane to create a de facto business class without the extra cost. Compass has obviously had some success with this strategy; the Roy Morgan survey for the September quarter found that Compass had 8.9 per cent of the business travel market, up from 5.3 per cent for the previous quarter (Blackburn 1991).

A related element of the quality-price trade-off has been the introduction of giveaways and bonuses. Both Ansett and Australian have used this form of marketing in the fight for market share, but travellers may prefer a discount on their ticket, particularly those from companies which are closely supervising travel budgets in the depressed economy. Compass has to date resisted such forms of giveaway promotion.

Both the main incumbent airlines are now utilising the frequent flier incentive scheme, which allows free air travel in addition to other gifts, in their efforts to attract the loyalty of business passengers.

The value of the frequent flier programs as a form of discounting must not be overestimated. Apart from the entry cost and the limitations on use of the 'reward' ticket, the level of discount is quite modest. For instance, under the Australian Airlines' scheme on the Sydney-Melbourne route, 13 full fare economy tickets are required for one free ticket, giving a discount of about 7 per cent. If discount tickets are purchased, then 19 are required for a free ticket, giving an additional discount on the discount fare of about 5 per cent.

CHAPTER 5 THE CONSUMERS' PERSPECTIVE — FARES

In this chapter, the extent to which consumers have benefited from deregulation in the form of lower fares is investigated.

AVERAGE REVENUE DATA

Comparison between Australian and United States data

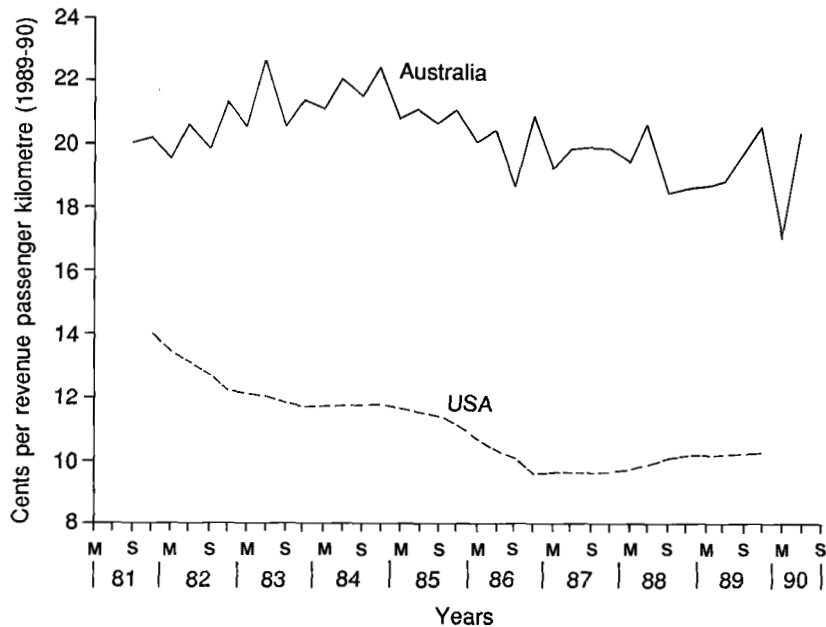
Figure 5.1 shows real average revenue per passenger kilometre for the main domestic carriers in Australia and the United States for the period 1981 to 1990. Over this period there was a significant decrease in real prices in the deregulated United States environment, but only a marginal decrease in the regulated Australian environment.

A direct comparison between the Australian and United States figures, involving a detailed analysis of factor inputs, is outside the scope of this study. However, on the assumption that revenue per RPK data reflect the underlying cost structures of the industries, the data in figure 5.1 suggest that there is scope for significant cost rationalisation in Australian domestic aviation.

Prices Surveillance Authority monitoring of air fares

In February 1991 the Government directed the Prices Surveillance Authority (PSA) to monitor movements in average fares on interstate routes. The PSA has so far collected quarterly data on average fares and passenger numbers from the airlines for each of the top 20 routes and has aggregated these to provide industry-average fare indices. The Authority's analysis of these fare data has focused on the seventeen top 20 routes which are either interstate or have a minimum of three operators.

The PSA has reported that, on these seventeen routes, aggregate average revenue has fallen by 9.9 per cent in nominal terms between the September 1990 and June 1991 quarters (PSA 1991). Adjusted for inflation this means that the average fare on these routes fell by 12.2 per cent in real terms.



Sources BTCE estimates; Morrison (1991).

Figure 5.1 Real average revenue per passenger kilometre, 1981 to 1990

Moreover, since over 80 per cent of passengers fly on the top 20 routes, there has clearly been a significant reduction of fares system-wide. Even under the very conservative assumption that average fares did not change on the other routes, the fall in the real average fare across the entire domestic aviation network was about 10 per cent by the end of June 1991.

Since June, it is likely that average fares have fallen even further as the airlines have been engaged in the most intense fare war to date. This argument is strengthened by Bureau estimates that about 40 per cent of passengers travelled on discount fares before deregulation and that this figure had increased to about 50 per cent by May 1991 and to between 60 and 70 per cent by October 1991.

Although the benefits of lower fares appear to be greatest on routes with high traffic densities, the benefits have extended throughout the trunk network. Table 5.1 provides a breakdown of the best available discount fares and competition on two groups of trunk routes in August 1991.

The maximum discounts on the routes directly linking Sydney, Melbourne, Brisbane, Adelaide and Perth averaged 63 per cent off the standard economy fare offered by Australian and Ansett, while on a sample of 21 other routes in the top 40, the maximum discount was 58 per cent less than the standard economy fare on average.

TABLE 5.1 TRUNK ROUTE CHARACTERISTICS, AUGUST 1991

	<i>Average discount fare^a</i>	<i>Average number of competitors^b</i>	<i>Compass presence^c</i>
Group 1 ^d	63	3.4	100
Group 2 ^e	58	2.9	24

- Notes*
- The discount is measured as the percentage off the full economy fare.
 - The number of competitors is defined as RPT domestic airlines operating on that route.
 - The Compass presence in Group 1 and Group 2 is the percentage of routes in each category served by Compass.
 - Group 1 refers to Adelaide–Melbourne, Adelaide–Sydney, Brisbane–Melbourne, Brisbane–Sydney, Melbourne–Sydney.
 - Group 2 refers to a selection of 21 trunk routes in the top 40 which have a capital city as an origin or a destination.

While this difference is relatively small, it is consistent with the results of the regression analysis discussed in chapter 4, which concluded that route density, the number of competitors and the presence of Compass all influence the magnitude of the discount fares available.

FARE CHANGES ON THE SYDNEY–MELBOURNE ROUTE

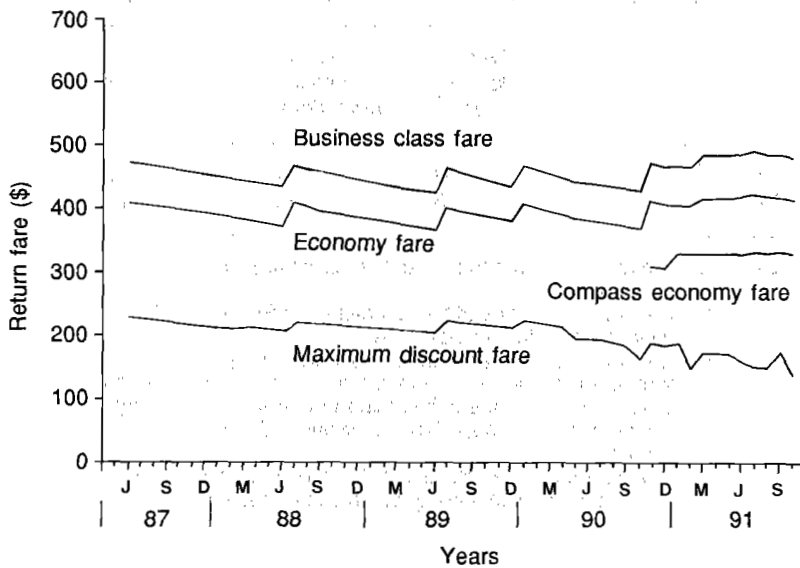
By analysing the details of fare movements on one route, such as Melbourne–Sydney, it is possible to develop a better understanding of changes in the level of average fares across the network.

Melbourne–Sydney is Australia's major air route and the passenger market is largely time-sensitive business travellers. Nearly 20 per cent of all domestic passengers, some 2.5 million, flew on this route in 1990.

The impact of deregulation on fares on this route is shown in figure 5.2. From this figure there are four factors to note about discount fares.

Firstly, prior to deregulation the best available discount was 45 per cent off the standard economy fare (about \$112 one way); this increased to 50 per cent off immediately after deregulation.

Secondly, the airlines have introduced a range of deep discounts at three different times of the year, in particular during October 1990, January–February 1991, and June–July–August 1991. The short October fare war saw discount fares fall to \$79 one way (66 per cent off the full economy fare) although this discount level rose to \$95 (58 per cent off the economy fare) at the end of October 1991.



Note: Based on 1989-90 dollars.

Sources: BTCE survey; DoTC unpublished data.

Figure 5.2 Melbourne-Sydney real air fares, 1987 to 1991

Thirdly, in real terms the depth of discounting has more than offset the rises in economy and premium fares, especially when there are indications that the business and first class sections of the market are contracting (refer below). This is corroborated by the PSA data for average fares.

Fourthly, even the full fare offered by Compass is a substantial discount (approximately 20 per cent) off the economy fares offered by Ansett and Australian.

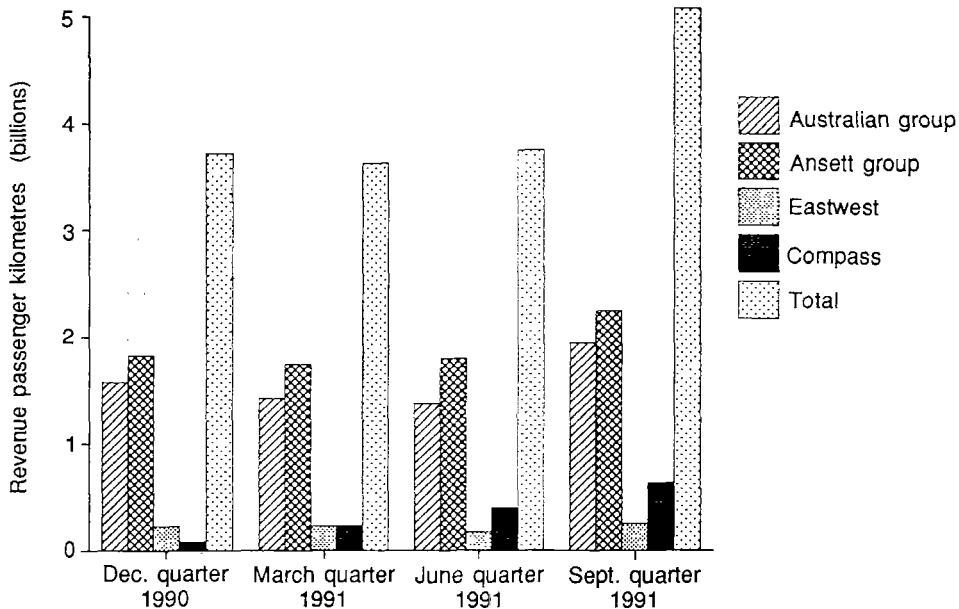
While discount fares are clearly lower, standard economy fares have risen from \$408 return in September 1990 to \$458 in October 1991, or 12.3 per cent in nominal terms. The airlines justified a 7.4 per cent rise in nominal fares in October 1990 on the grounds of fuel price rises due to the Gulf crisis. If this is taken into consideration, the nominal fare increased by 4.6 per cent in the first year of deregulation. This increase in full fares is consistent with a yield management policy which dictates a higher price be paid for the convenience of 'on demand' service. Trends in the United States since deregulation have also revealed an increasing differential between full and discount fares, with those customers unable to purchase in advance (with presumably very inelastic demands) paying relatively high fares.

The average real fare fell by 10.8 per cent on the Melbourne–Sydney route between the September 1990 and June 1991 quarters, based on PSA (1991). The sharpest fall was during the March 1991 quarter when the real average fare fell by over 6.2 per cent. Figures for the September 1991 quarter may indicate a larger fall as a result of the extended discount war which has impacted on this route.

PASSENGER GROWTH AND DISCOUNTING

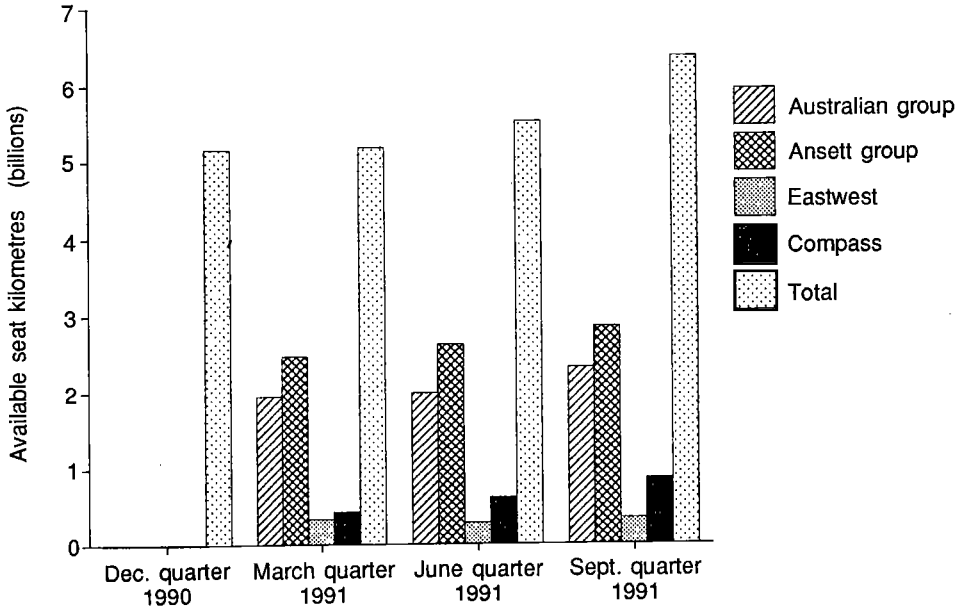
Over the period between the September 1990 and September 1991 quarters there has been heavy discounting by the airlines. This partly explains why record patronage levels have been achieved in spite of the recession, which would usually be expected to reduce the level of patronage on the domestic network.

Figure 5.3 shows domestic airline revenue passenger kilometres since deregulation. Note that the September 1991 quarter RPK figure is significantly higher than the June 1991 quarter figure, partly reflecting the impact of the June–August discount war. The airlines performed a record total of 16.1 billion RPKs for the year ending 30 September 1991, representing an increase of 16.7 per cent and 42.5 per cent over the years 1987–88 and 1988–89 (DoTC 1991c).



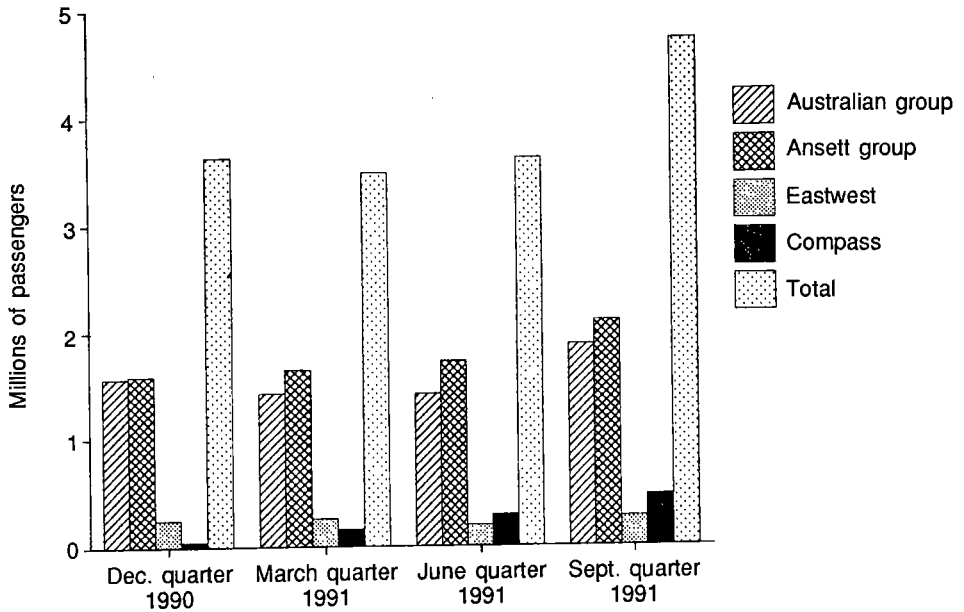
Source DoTC (1991c).

Figure 5.3 Domestic airline revenue passenger kilometres since deregulation



Source DoTC (1991c).

Figure 5.4 Domestic airline available seat kilometres since deregulation



Source DoTC (1991c).

Figure 5.5 Patronage on domestic airlines since deregulation

Figure 5.4 shows domestic airline available seat kilometres. Compared to RPKs, ASKs have increased at a slower rate between the June 1991 and September 1991 quarters, which explains why load factors reached record levels during the September 1991 quarter of 79.7 per cent (DoTC 1991c). ASKs increased by 15.6 per cent during this period compared to an increase in RPKs of 35.4 per cent.

The increase in quarterly passenger numbers between the December 1990 and September 1991 quarters shown in figure 5.5 reflects the impact of extended heavy discounting. The record increase in passenger numbers of 31 per cent was less than the increase for RPKs in figure 5.3. This suggests that the average stage length flown on the network is longer now than at the beginning of deregulation, probably as a result of increased patronage on routes between Perth and the eastern States, and between Queensland holiday destinations and the southern States.

Patronage in Ansett's and Australian's premium (business and first) class cabins has not followed the trend observed for total patronage. The gradual decline in both first class and business class patronage in recent months has been due to the dilution of passengers to lower class fares (partly in response to service quality improvements such as better seating), diversion of passengers from the two main incumbents to other airlines and the ongoing influence of the recession.

CHAPTER 6 IMPACT OF DEREGULATION ON SERVICE QUALITY

In evaluating the impact of deregulation, it is important to assess changes in service quality as well as fares.

The term service quality can mean different things to different people. For some, in-flight comfort and service might be the most important consideration, while other consumers might put more emphasis on convenience of booking a flight at short notice or the quality of airport departure lounge facilities.

The Bureau's work on service quality indicators, of which this is a part, builds on the conceptual framework developed by Lancaster (1966) for analysing service quality. This framework is based on the characteristics of a *product* which interact with the utility functions of consumers. Quality is then determined by the quantity of the various characteristics present in the *product*. If there are increases in the quantities of some characteristics (for example, frequency of flights) and decreases in the quantities of others (for example, size of aircraft) information on consumers' valuations of these characteristics is required to determine whether the overall level of service quality has increased or decreased.

In assessing the effect of deregulation on aviation service quality, it is therefore necessary to identify the characteristics to be measured, and then to assess the characteristics before and after deregulation.

There are a large number of indicators which could be used to assess service quality in the aviation sector (BTCE, forthcoming). Studies of the effects of deregulation in overseas aviation markets provide guidance on which aspects of service quality to assess when evaluating the impact of Australian domestic deregulation. However, in this work the availability of data largely determined which indicators could be included in the analysis.

This chapter provides quantitative data on pre-deregulation and post-deregulation comparisons of flight frequency, load factors, the availability of non-stop services, on-time performance and choice of operator. We also discuss, in qualitative terms, passengers accessibility to RPT services, quality of in-cabin and on-ground services and safety.

FREQUENCY OF SERVICE

One of the main benefits to consumers resulting from deregulation of the domestic aviation market in the United States has been an increase in the frequency of flights between many locations (US DOT 1990). Increased frequency of service not only increases the consumers' choice of departure times but increases the probability of being able to book a flight at very short notice.

To look at the effect of deregulation on this aspect of service, both the number of scheduled and actual flights in a sample of markets were compared before and after deregulation. More specifically, to assess changes in the actual number of flights, a sample of routes was chosen consisting of the top 40 city pair routes in terms of the numbers of passengers carried (traffic on board) by the domestic airlines during January 1990. As shown in figures 3.1 and 3.2, passengers carried on these routes comprise approximately 90 per cent of total passengers carried by the domestic airlines.

In order to isolate, as far as possible, the effects of deregulation from the effects of the pilots' dispute and seasonal influences, the main comparison is between the flight frequencies in the June quarters of 1990 and 1991. By April 1990, the effects of the pilots' dispute had dissipated and passenger numbers had returned to a 'normal' pre-deregulation level. The DoTC reported that:

The rebuilding of the airlines after the dispute resulted in the recovery of the industry to the extent that by April 1990, traffic levels, boosted by Easter holiday traffic, had recovered to near the same level for the corresponding month in 1989. By May 1990 airline capacity levels surpassed the available seat kilometres achieved for the same month in 1989. This followed the airlines' return, during April, of the last of their leased aircraft which had been used during the pilots' dispute (DoTC 1991a).

Flight frequencies were compared on all RPT services (both domestic and commuter) on the top 40 routes and the results of this analysis are shown in table 6.1. There was a 21 per cent increase in the number of RPT flights on the top 40 routes from the June quarter in 1990 to the June quarter 1991. Over the same period the total number of passengers carried increased by 18 per cent. The seven routes which had the largest increases in flight frequencies were:

- Brisbane–Cairns (115 per cent);
- Brisbane–Mackay (107 per cent);
- Geraldton–Perth (77 per cent);
- Perth–Sydney (71 per cent);
- Melbourne–Perth (58 per cent);
- Cairns–Sydney (58 per cent); and
- Brisbane–Rockhampton (52 per cent).

Only seven of the top 40 routes incurred a decrease in flight frequency.

TABLE 6.1 COMPARISON OF REGULAR PUBLIC TRANSPORT SERVICE FREQUENCIES^a
ON THE TOP 40 ROUTES BETWEEN THE JUNE QUARTER 1990 AND THE
JUNE QUARTER 1991

	June quarter 1991		June quarter 1990		Percentage change from June quarter 1990 to 1991	
	Trips	Passengers	Trips	Passengers	Trips	Passengers
Melbourne–Sydney	6 468	729 284	5 624	603 795	15	21
Brisbane–Sydney	4 440	508 135	3 755	397 768	18	28
Adelaide–Melbourne	2 339	223 192	1 981	203 788	18	10
Canberra–Sydney	3 567	167 074	2 773	145 180	29	15
Brisbane–Melbourne	1 784	165 834	1 402	132 364	27	25
Coolangatta–Sydney	2 234	154 892	1 955	149 634	14	4
Brisbane–Cairns	1 841	132 994	856	70 729	115	88
Melbourne–Perth	1 355	132 778	858	89 262	58	49
Adelaide–Sydney	1 422	127 222	1 206	121 547	18	5
Hobart–Melbourne	1 550	119 830	1 284	101 463	21	18
Canberra–Melbourne	1 842	115 828	1 631	111 842	13	4
Perth–Sydney	945	97 308	554	61 039	71	59
Launceston–Melbourne	1 676	83 058	1 429	70 741	17	17
Brisbane–Townsville	1 456	78 214	1 027	92 126	42	-15
Melbourne–Coolangatta	719	56 050	497	48 534	45	15
Adelaide–Perth	657	53 430	632	53 714	4	-1
Brisbane–Rockhampton	1 499	51 447	983	38 691	52	33
Adelaide–Alice Springs	377	43 341	368	41 041	2	6
Cairns–Sydney	394	43 313	249	21 330	58	103
Alice Springs–Darwin	422	40 902	399	42 280	6	-3
Alice Springs–Sydney	378	30 245	354	24 764	7	22
Karratha–Perth	485	27 896	477	26 754	2	4
Devonport–Melbourne	629	23 500	547	21 984	15	7
Coffs Harbour–Sydney	560	22 256	578	21 788	-3	2
Brisbane–Mackay	742	21 503	359	21 714	107	-1
Brisbane–Darwin	251	21 469	234	21 109	7	2
Alice Springs–Ayers Rock	370	21 127	429	13 833	-14	53
Hamilton Island–Sydney	269	20 446	239	15 190	13	35
Kalgoorlie–Perth	652	20 106	762	22 332	-14	-10
Cairns–Townsville	708	19 131	1 290	43 263	-45	-56
Sydney–Wagga	526	19 070	514	17 983	2	6
Alice Springs–Cairns	309	15 271	357	16 114	-13	-5
Mackay–Rockhampton	916	13 856	618	13 983	48	-1
Brisbane–Hamilton Island	223	13 496	247	14 566	-10	-7
Geraldton–Perth	498	12 798	281	10 041	77	27
Devonport–Sydney	182	11 354	244	13 631	-25	-17
Perth–Port Hedland	216	10 861	215	12 276	0	-12
Hobart–Sydney	214	10 610	195	11 055	10	-4
Broome–Perth	174	10 113	124	6 932	40	46
Darwin–Kununurra	190	10 031	190	10 514	0	-5
Total	45 479	3 479 265	37 717	2 956 694	21	18

a. Includes both domestic and commuter airlines.

Source DoTC aviation statistics database.

An additional issue regarding the impact of deregulation is the distribution of benefits across the trunk network. In particular, to what extent have benefits extended beyond the Brisbane–Sydney–Melbourne–Adelaide corridor? To address this issue, further analyses of flight frequencies based on actual trips were undertaken to separately identify the impact of deregulation on services:

- between Sydney, Melbourne, Brisbane, and Adelaide; and
- on the remaining trunk routes which were included in the original top 40 routes.

It was found that the average increase in flight frequencies (weighted by passenger numbers) was 18 per cent for the main intercapital routes and even larger (27 per cent increase) on the other trunk routes in the top 40 set. A number of tourist destinations have clearly benefited from increased flight frequencies since deregulation.

The data also reveal that the increase in flight frequency is not due solely to the entry of Compass. A comparison of flight frequency data for the June quarters in 1990 and 1991 is presented in table 6.2. The domestic airlines (including Compass) increased flight frequency by 16 per cent on the top 40 routes, while passenger numbers rose by 17 per cent. When Compass figures are excluded from the totals, the increases are 11 per cent and 7 per cent respectively. Refer to appendix II for details.

In order to determine whether the results of these analyses were influenced by changes to the size of aircraft operating on the top 40 routes, the average seating capacity of aircraft serving each city pair was calculated for the June quarters of 1990 and 1991 (table II.2). The results showed that the average aircraft size remained relatively constant over this period. The only three routes which experienced a decrease of 20 or more in average aircraft seating capacity were Brisbane–Townsville, Melbourne–Coolangatta and Cairns–Townsville. It is therefore concluded that the increased frequency of flights can not be attributed to any great extent to substitution of smaller aircraft.

To shed additional light on the impact of deregulation on flight frequencies, the number of scheduled flights were compared in mid 1990 and mid 1991 (see appendix II, table II.3). More specifically, a list of 82 routes was chosen on the basis of what Australian Airlines defines as 'Main Routes Services'. Flight data were tabulated based on timetables in effect in mid 1990 and mid 1991 for Australian, Ansett (including Air NSW/Ansett Express), Eastwest and Compass. Comparison of the average frequencies between the two dates indicated an increase of 18 per cent in the number of flights. It is noteworthy that this analysis, based on a different sample, data source and time period, yields a result quite consistent with the findings based on actual trips.

In summary, the available evidence clearly shows a significant increase in frequency of flights on the main domestic air routes in the post-deregulation period. It is also evident that the increase in flight frequency has been widespread and is not due only to the entry of Compass Airlines to the industry.

TABLE 6.2 COMPARISON OF DOMESTIC AIRLINE SERVICE
 FREQUENCIES ON THE TOP 40 ROUTES BETWEEN
 THE JUNE QUARTER 1990 AND THE JUNE QUARTER
 1991

(percentage change)

	<i>Trips</i>	<i>Passengers</i>
Melbourne–Sydney	15	21
Brisbane–Sydney	18	28
Adelaide–Melbourne	18	10
Canberra–Sydney	28	8
Brisbane–Melbourne	27	25
Coolangatta–Sydney	14	4
Brisbane–Cairns	73	88
Melbourne–Perth	58	49
Adelaide–Sydney	18	5
Hobart–Melbourne	21	18
Canberra–Melbourne	7	2
Perth–Sydney	71	59
Launceston–Melbourne	1	9
Brisbane–Townsville	6	-16
Melbourne–Coolangatta	45	15
Adelaide–Perth	4	-1
Brisbane–Rockhampton	40	32
Adelaide–Alice Springs	2	6
Cairns–Sydney	58	103
Alice Springs–Darwin	6	-3
Alice Springs–Sydney	7	22
Karratha–Perth	2	4
Devonport–Melbourne	-13	-6
Coffs Harbour–Sydney	-3	2
Brisbane–Mackay	5	-9
Brisbane–Darwin	7	2
Alice Springs–Ayers Rock	-14	53
Hamilton Island–Sydney	13	35
Kalgoorlie–Perth	-18	-14
Cairns–Townsville	-65	-72
Sydney–Wagga	2	6
Alice Springs–Cairns	-13	-5
Mackay–Rockhampton	66	57
Brisbane–Hamilton Island	-10	-7
Geraldton–Perth	24	-6
Devonport–Sydney	-25	-17
Hobart–Sydney	10	-4
Perth–Port Hedland	0	-12
Broome–Perth	40	46
Darwin–Kununurra	0	-5
Average (weighted)	16	17

Source DoTC aviation statistics database.

LOAD FACTORS

Load factors reflect the interaction of demand and supply levels on any particular route. Low load factors improve service quality by:

- increasing the probability of being able to book a flight at very short notice; and
- reducing crowding in-cabin and on-ground (baggage handling and check-in).

As indicated in table 6.3, average load factors for the domestic airlines on the top 40 routes remained relatively constant to the end of June 1991. Just over half of the routes experienced a decrease in average load factors. Of the eleven intercapital city routes, only four experienced increases in average load factors and these were as low as 1 or 2 per cent. The quarterly tables in appendix II also show that while load factors fluctuated from period to period, average load factors to the end of June 1991 decreased from their pre-deregulation levels.

Data for the September 1991 quarter indicated that load factors rose substantially during the quarter, with load factors from the high 80s to the mid 90s range in some instances.

In summary, apart from short-term increases in load factors on some routes, there has not been significant change to this aspect of service quality since deregulation.

NON-STOP SERVICES

Another measure of consumer convenience is the availability of non-stop services on the main routes. Consumer benefits from non-stop service include:

- shorter transit times;
- reduced anxiety for passengers because of fewer landings and take-offs;
- greater security for luggage; and
- avoidance of the inconvenience of changing aircraft.

One of the main disadvantages to consumers from deregulation in the United States was a decrease in non-stop services between many locations. This was due in large measure to the establishment of hub-and-spoke networks.

In order to measure the impact of deregulation on the level of non-stop service in Australia, a comparison of the domestic airlines' non-stop city pair network in June 1990 and June 1991 was undertaken. There was an increase from 128 to 135 in the number of non-stop passenger services, with 14 non-stop services being discontinued and 21 new non-stop services being added to the network. Many of the routes involved were very thin routes with only a few flights each month. Examples of more dense non-stop services which have begun in recent months include Canberra-Brisbane and Perth-Brisbane.

TABLE 6.3 COMPARISON OF DOMESTIC AIRLINE AVERAGE
LOAD FACTORS ON THE TOP 40 ROUTES BETWEEN
THE JUNE QUARTER 1990 AND THE JUNE QUARTER
1991

	<i>Percentage change in average load factor</i>
Melbourne–Sydney	1
Brisbane–Sydney	1
Adelaide–Melbourne	–2
Canberra–Sydney	–16
Brisbane–Melbourne	2
Coolangatta–Sydney	–9
Brisbane–Cairns	–3
Melbourne–Perth	–9
Adelaide–Sydney	–4
Hobart–Melbourne	3
Canberra–Melbourne	–2
Perth–Sydney	–1
Launceston–Melbourne	8
Brisbane–Townsville	–6
Melbourne–Coolangatta	–3
Adelaide–Perth	1
Brisbane–Rockhampton	11
Adelaide–Alice Springs	–8
Cairns–Sydney	4
Alice Springs–Darwin	–15
Alice Springs–Sydney	19
Karratha–Perth	5
Devonport–Melbourne	–5
Coffs Harbour–Sydney	–2
Brisbane–Mackay	–11
Brisbane–Darwin	–3
Alice Springs–Ayers Rock	15
Hamilton Island–Sydney	12
Kalgoorlie–Perth	4
Cairns–Townsville	9
Sydney–Wagga	11
Alice Springs–Cairns	11
Mackay–Rockhampton	–4
Brisbane–Hamilton Island	10
Geraldton–Perth	23
Devonport–Sydney	–12
Hobart–Sydney	–17
Perth–Port Hedland	–11
Broome–Perth	3
Darwin–Kununurra	–3
Average (weighted)	–1

Source DoTC aviation statistics database.

In addition, a comparison of non-stop service frequency on the main routes served by domestic airlines was made using the published schedules in effect at mid 1990 and mid 1991. This comparison shows an increase of 20 per cent in scheduled non-stop flights per week.

Clearly, there is no evidence of a trend away from non-stop services as occurred in the United States after deregulation.

ON-TIME PERFORMANCE

The need for punctuality varies between consumer groups, with the business consumer generally assigning a very high significance to this aspect of service. On-time performance can, however, also be critical for the leisure traveller who, for example, must make a connecting flight. Consumer inconvenience may also increase exponentially with delays of longer duration. A short delay can often be accommodated in the traveller's schedule with little or no expense or inconvenience, while a longer delay may have serious consequences.

A deterioration in on-time performance has been another major negative effect of deregulation in the United States. The increase in United States flight delays appears to have occurred primarily because infrastructure capacity has not kept pace with the increase in demand following deregulation. In addition, the development by the airlines of hub-and-spoke networks has resulted in hub congestion, particularly at peak times, where flights from many origins arrive simultaneously and depart to many destinations a short time later.

As discussed in chapter 5, there has been a significant increase in demand for aviation services in Australia since deregulation. In order to assess whether this increase in demand has resulted in a deterioration in on-time performance, the scheduled and actual arrival and departure times for domestic flights at the major airports were compared over the July 1990 to June 1991 period.

The results of these comparisons are shown in figure 6.1 in terms of the percentage of domestic RPT aircraft arrivals and departures within 15-minutes of the scheduled times. Data are available from July 1990 to June 1991 inclusive for Sydney, Melbourne and Brisbane, but data for Adelaide and Perth are only available from January 1991. The 15-minute time period was chosen as, by international convention, flights arriving or departing within 15 minutes of the scheduled times are considered to be on-time.

For Sydney, Melbourne and Brisbane it can be seen that at the end of June 1991 there had been no deterioration in on-time performance as a result of deregulation. Although the time series is too short to identify any seasonal patterns, a comparison of the beginning and end points on the graphs takes account of seasonal factors. For all three airports an improvement in on-time performance for both arrivals and departures over the period is evident, with arrival performance better than departure performance.

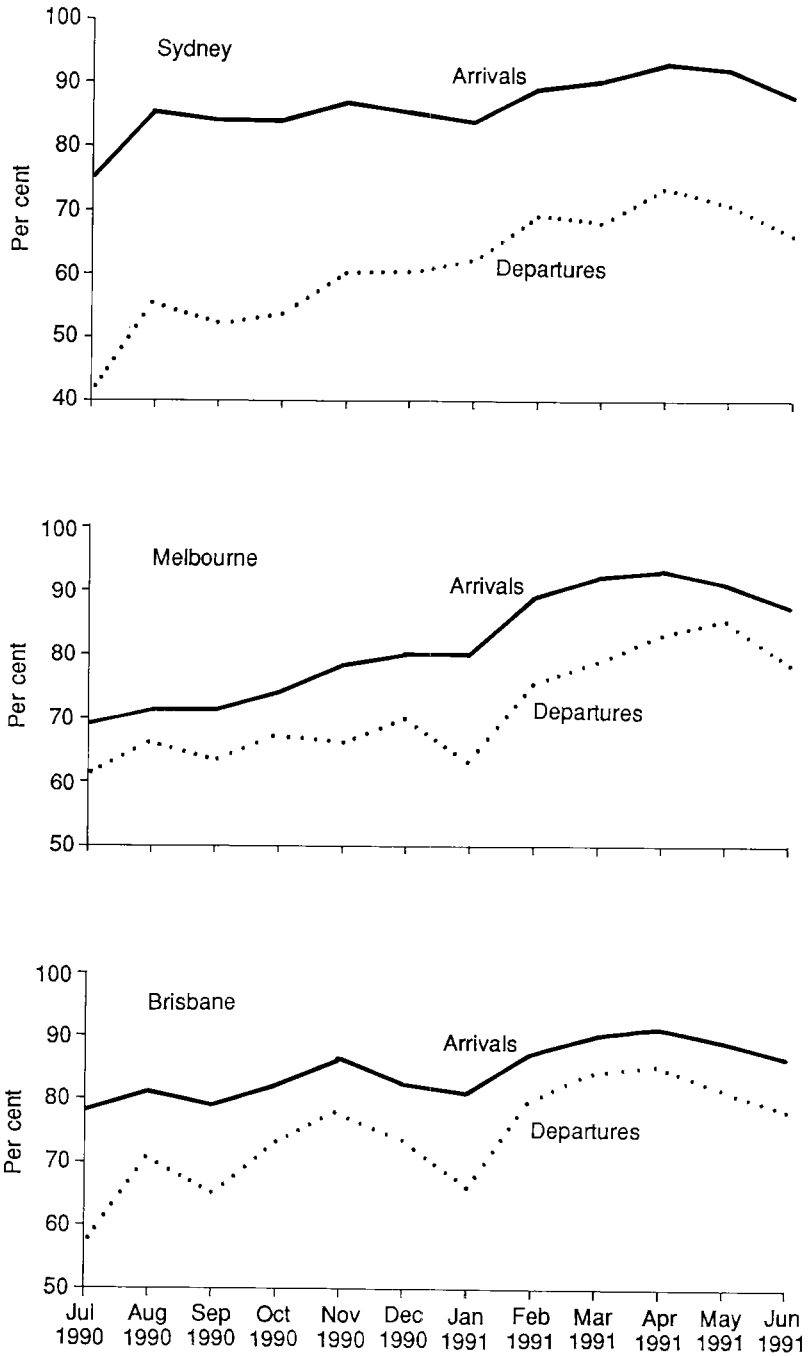
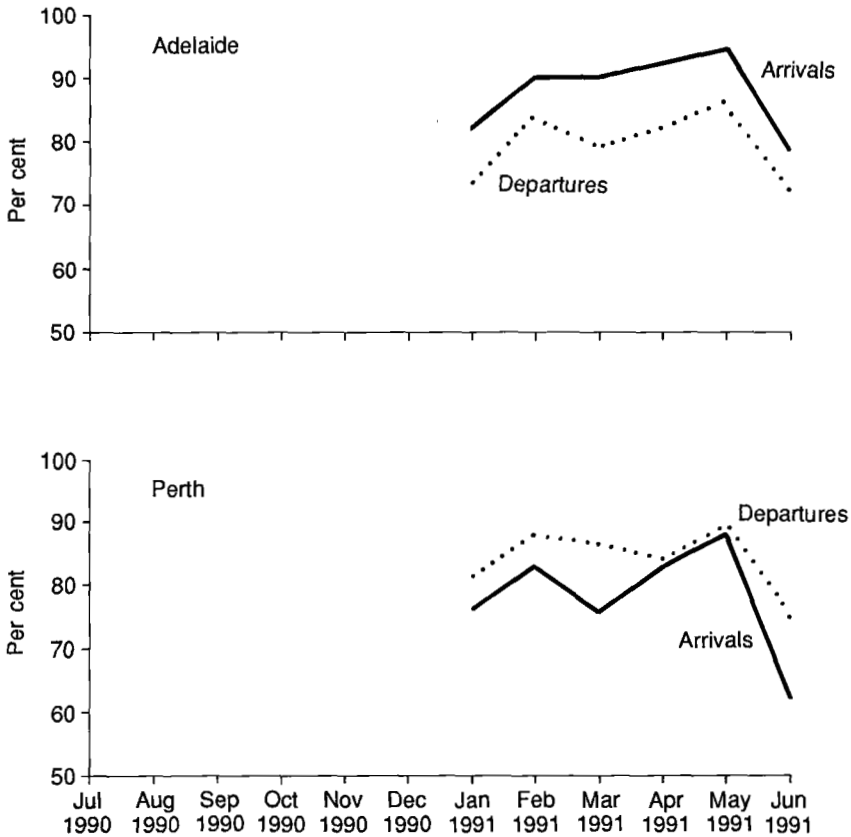


Figure 6.1 Percentage of flights arriving and departing within 15 minutes of the scheduled time*



a. Based on the subset of total arrivals and departures recorded by Air Traffic Service Personnel which were able to be electronically matched with scheduled arrivals and departures from airline CRS systems.

Sources BTCE (CAA flow management data base); Airline CRS systems.

Figure 6.1 (cont.) Percentage of flights arriving and departing within 15 minutes of the scheduled time*

ACCESSIBILITY TO REGULAR PUBLIC TRANSPORT SERVICES

Accessibility in the context of quality of aviation services refers to the proximity of an airport to a particular community and to the provision of RPT services to and from that airport. It must be kept in mind that deregulation in Australia directly affected only the 18 designated trunk airports.

Studies have shown that RPT services to numerous small communities in the United States were discontinued following deregulation, although overall the frequency of service to small communities has increased. In the Australian context, discontinuing services to some small communities would be particularly disruptive due to the long distances to the next closest airport.

Since deregulation the balance between domestic and commuter airline services has changed on several routes in the network. However, there are only a very small number of routes on which there has been a complete shift from domestic to commuter services. There also appears to have been no shortage of operators willing to commence service on routes where an incumbent operator had discontinued the service. For example, within one week of Hazelton Airlines withdrawing services to 15 communities, nine of the routes were being serviced by other operators. The remaining routes were also subsequently serviced by other operators.

Only two airports in the total network have lost all RPT services in the past year.

The available evidence therefore indicates that passengers' accessibility to RPT services has not been adversely affected by deregulation.

CHOICE OF OPERATOR

A greater number of operators on a route can affect consumer welfare through increased choice of:

- aircraft type (with consequent impact on transit times, in-cabin comfort and service, and safety levels);
- departure times; and
- fare levels and conditions.

Figures 3.6 and 3.7 show that there has clearly been an increase in choice of operators on many major routes following deregulation. Routes with four airlines increased from zero to five, routes with three airlines increased from eleven to thirteen, and routes with only two operators decreased from nine to two.

QUALITY OF IN-CABIN AND ON-GROUND SERVICES

As discussed in chapter 4, there have been major improvements in the quality of the services provided to air passengers since deregulation, both on the ground and in the air.

Improvements to ground-based services start even before the customer walks in the door of the terminal. Ansett and Australian have introduced valet parking services to enable ease of access for the self-drive customer. Once at the airport, the traveller receives the benefits of upgraded terminal facilities, particularly airline clubs.

Improvements to the services on the aircraft have also been significant. Compass and Eastwest, with their one-class cabins, have chosen to provide generous space for passengers, while Australian and Ansett have chosen to provide additional space and upgraded service, primarily to premium passengers in business and (in Ansett's case) in first class. Compass has also introduced the first on-board movies for domestic services in Australia.

In response to the increased demand for discounted economy seating, both the major airlines attempted to introduce a *de facto* four-class aircraft by distinguishing between full economy fare passengers and discount fare passengers. However, with the exception of the experiment by Ansett at providing lower grade in-flight refreshments to discount passengers, this has largely been achieved by providing extras such as newspapers and free drinks to full fare paying passengers, rather than cutting the quality of service to discount fare passengers.

The overall impression is that under deregulation passengers are generally receiving either upgraded service or discount fares, or in some cases (such as Compass passengers with more leg room), both. There is no evidence of any real decline in these aspects of service quality to any market segment.

SAFETY

Aviation safety regulation in Australia was not directly affected by deregulation of the industry. Any possible impact would therefore have to be due to indirect effects such as increased congestion, entry of new operators, or financial pressure on operators to cut costs.

Numbers of accidents and fatalities have generally been used as indicators of safety levels in the aviation industry. Data for the Australian RPT aviation sector indicate that the major domestic airlines have had no fatal accidents since 1968 and only ten accidents in total in the ten years to December 1990. Supplementary and commuter airlines have had two fatal accidents and thirty-two accidents in total over the past ten years. There have been no fatal accidents involving jet aircraft in the RPT sector.

Studies based on several years experience in the deregulated environment in the United States have found no negative safety impacts associated with deregulation (Moses and Savage 1990). Although a quantitative assessment of safety is beyond the scope of this study, safety regulatory authorities in Australia consider that deregulation will not adversely affect safety. Strict safety regulation and inspection procedures will be maintained. In addition, the ongoing process of upgrading aviation infrastructure, systems and operating procedures is designed to ensure that safety standards are not compromised.

There is, therefore, no evidence to suggest that aviation safety in Australia has been, or will be adversely affected by deregulation.

DISCUSSION

After one year of deregulation consumers have benefited from increased quality of service with respect to:

- frequency of flights;
- non-stop services;
- on-time performance;
- choice of operators; and
- in-cabin and on-ground service.

There has been a small decrease in quality of service for some consumers due to higher load factors and reduced accessibility to RPT services on some non-trunk routes.

The available evidence indicates that deregulation has not resulted in a deterioration in safety. It is therefore concluded that there has been an overall increase in consumer welfare due to improved quality of service during the first year of deregulation. This conclusion suggests that the aviation infrastructure in Australia has been able to cope with the increased demand resulting from deregulation. The Federal Airports Corporation has an ongoing capital works program, based on forecast demand levels, to ensure the adequacy of airport infrastructure. The Civil Aviation Authority is likewise revising its operations and procedures to ensure the adequacy of airways facilities to safely handle increasing demand. Aviation infrastructure should therefore facilitate improved levels of service quality in the future.

CHAPTER 7 EFFECT OF DEREGULATION ON OTHER MODES OF TRANSPORT

DETERMINANTS OF MODAL CHOICE

When deciding which mode to choose for a journey, the traveller has to consider a number of factors such as cost (direct and indirect), convenience, travel time and the enjoyment of the trip itself. The values of these factors, and the consequent weight which each has upon the decision, varies over time with improvements in technology, changes in the market and changes in individual lifestyle. For example, improvements to the road network have affected the cost, convenience and time considerations for a journey by private car or coach. In the final choice, the traveller places a weighting, whether consciously or unconsciously, on each factor when making a modal decision.

PRE-DEREGULATION

Until the late 1980s, air travel and land travel for intercity journeys within Australia were virtually separate markets, with little substitution between modes. Often those who travelled by land did so because they could not afford to travel by air, or because they preferred to see the country through which they were travelling, or because they wanted to use their car at their destination. On the other hand, many who could afford to travel by air considered surface transport too slow and inconvenient. The main area of competition was between the long distance coach companies and the railways.

Two events occurred in the latter part of the 1980s which caused many people to think more seriously about changing modes for long journeys. The first was the Very Fast Train (VFT) proposal, which promoted fast rail transport as a viable alternative to air, coach and conventional rail travel in the Sydney–Canberra–Melbourne corridor. The VFT proponents suggested that the train would provide a Sydney–Melbourne service in three hours for \$130 economy, Sydney–Canberra in one hour for \$60 and Canberra–Melbourne in two hours for \$100. With travel times and prices between those of air travel and existing surface travel, the VFT proposal, together with the concurrent alternatives proposed, such as an upgrade of the existing Sydney–Melbourne rail service, raised the issue of a price–time offset for travel in that corridor.

The other significant event was the pilots' dispute, which had the effect of forcing many people who would not otherwise have done so, to travel by coach, bus or car on long journeys. This was made more convenient by improvements to the road network in the preceding years. However, with the possible exception of the short Canberra–Sydney route, any transfer of travellers from air to rail, coach and car was not a long-term phenomenon. Table 7.1 illustrates that, by, 1990 traffic on the Sydney–Canberra route had not recovered from the input of the pilots' dispute in the same way as on the Sydney–Melbourne and the Canberra–Melbourne routes.

TABLE 7.1 CHANGE IN AIR TRAVEL, 1987 TO 1990
(indices of uplift-discharge patronage)

	<i>Canberra–Sydney</i>	<i>Canberra–Melbourne</i>	<i>Sydney–Melbourne</i>
1987	100	100	100
1988	106	106	109
1989	67	72	89
1990	83	102	108

Note 1987 is the base year for the indices.

Source DoTC (1991a).

TABLE 7.2 INTERMODAL COMPARISON: JANUARY AND MAY 1991
(dollars per journey)

	<i>Car</i>	<i>Coach</i>	<i>Train</i>	<i>Air</i>
<i>January</i>				
Sydney–Melbourne	149	45	80	100
Sydney–Brisbane	140	65	85	100
Sydney–Perth	600	225	200	250
<i>May</i>				
Sydney–Melbourne	149	52	85	85
Sydney–Brisbane	140	63	90	85
Sydney–Perth	600	225	200	165

Notes a. Car costs are based on running (variable) costs of a Nissan Pulsar of approx 14c per kilometre.
b. Fares for rail and coach are full economy fare; however many rail passengers are pensioners and are entitled to significant concessions.
c. Air fares are the lowest discount air fares at the time.

Sources Ballantyne (1991); Roberts (1991); BTCE survey.

DEREGULATION OF THE DOMESTIC AVIATION MARKET

Since deregulation, however, there has been a dramatic effect on modal choice in some corridors. As extensive and deep discounting has become a feature of domestic aviation in 1991, and the traveller has been educated to shop around for cheap air fares, many people who would normally travel by land have chosen to travel by air.

This modal switch has probably not been uniform across the transport network: some long distance corridors with significant discounting appear to have experienced higher levels of substitution of air for land; shorter routes without much discounting appear to have been less affected. The improvements in service quality outlined in chapter 6 will also have contributed to the modal switch.

To help explain the impact of the air fare discounting on modal choice, the travel costs for air, car, coach and rail for the Sydney–Melbourne, Sydney–Brisbane and Sydney–Perth routes are compared in table 7.2 for the January and May discount wars. The air fares in this table were the lowest discount fares operating at the time compared to the prevailing standard coach and train fares. The table shows how air travel became increasingly competitive with coach and train travel as the discounting continued.¹

It can be seen from table 7.2 that by May the lowest air fare on the Sydney–Perth route was significantly less than either the coach or train fares. This had a major impact on patronage on the Indian Pacific rail service, which in the winter months had load factors of as low as 20 per cent, compared with the normal 80 per cent. Partly as a result of the increased competition from air travel, the Indian Pacific services were cut from three to two services each direction per week in June and an additional five services were cancelled in August.

The Australian Transport Advisory Council is expected to consider in March 1992 a report which will examine the possibility of establishing a national rail passenger organisation. The Council will as a matter of priority consider the management and operation of the Indian Pacific service.

The diversion of passengers from rail to air on the Sydney–Perth route partly explains the increase in air patronage on the route since deregulation. However, a large fraction of the increased patronage was due to market stimulation, that is passengers who otherwise would not have made the journey.

Discounting was also introduced for both road and rail at the time of the June air fare discount campaign; Sydney–Brisbane cost \$50 (later \$48) by coach, \$65 for rail and \$88 by air. However, at the beginning of July, at the same time as

1. It should be noted that a large proportion of train passengers travel on discounted tickets through pension concessions; those discounts are, however, not available to the general public.

Canberra was included in the discount war, the one-way economy rail fare Sydney–Canberra was increased from \$30 to \$31.70, with the maximum discount air fare costing \$59 and coach \$24.

The Sydney–Melbourne Intercapital Daylight rail service was suspended from the end of August. It had been running at a load factor of around 40 per cent in May and June, despite a discounted fare of \$50. Passenger numbers had dropped by one third in the previous year. The overnight rail economy fare from Sydney to Melbourne was reduced from \$85 (the maximum discount air fare) to \$49 and capacity added to the overnight train to bring total capacity on the route back to

TABLE 7.3 COMPARISON OF STANDARD GREYHOUND/PIONEER COACH FARES WITH DISCOUNTED AIR FARES, WINTER 1991

	Time (hours)		Coach price (\$)	Air price (\$)	
	Coach	Air		Maximum discount	Standard economy
Syd–Mel	12	1.00	52	85	229
Syd–Bne	16	1.15	63	88	237
Adl–Mel	10	1.10	40	70	217
Ool–Syd	14	1.15	63	80	224
Bne–Mel	23	1.55	119	135	346
Adl–Syd	19	1.50	125	110	312
Cbr–Syd	4	0.40	24	59	132
Mel–Per	46	4.00	205	150	518
Cbr–Mel	9	0.55	48	79	185
Bne–Cns	24	2.05	139	125	354
Per–Syd	55	4.30	225	175	577
Bne–Tsv	19	1.40	120	139	313
Adl–Per	34	3.00	160	175	414
Mel–Ool	25	2.00	119	140	338
Bne–Mky	13	1.30	90	132	259
Bne–Rok	9	1.10	63	103	201
Cns–Syd	40	2.45	180	165	458
Adl–Asp	18	2.00	153	159	366
Cfs–Syd	9	0.55	53	96	167
Asp–Syd	43	3.20	265	209	437
Adl–Drw	34	3.30	299	249	508
Asp–Drw	17	2.00	153	169	334
Bne–Drw	46	3.30	289	269	556
Adl–Bne	29	2.15	173	155	439
Syd–Wga	8	1.10	40	142	142
Asp–Cns	33	2.20	225	149	370
Mcy–Syd	18	1.20	74	125	245
Asp–Ayq	5	0.50	63	99	163

Notes a. Routes listed in uplift-discharge ranking for air travel, 1990.
 b. Times and prices are for one-way journeys.

Sources Pioneer/Greyhound timetables and fare schedule; BTCE survey of airlines.

around 84 per cent. A combination service, consisting of a V/Line train from Melbourne to Wodonga and a coach service from Wodonga to Sydney, was introduced to provide a daylight service for \$49 economy class. Also at this time Greyhound overnight fares Sydney–Melbourne were reduced from \$52 to \$35, Melbourne–Canberra and Melbourne–Adelaide overnight bus fares were also reduced to \$35, and Sydney–Adelaide fares were reduced to \$89.

A comparison between the price and travel time for coach and air journeys on a wide range routes is given in table 7.3. This comparison makes it clear why there is little doubt that there has been, and will probably continue to be, substantial diversion from bus to air in the face of continued air fare wars. Of the 30 top routes surveyed, 16 had discounted airfares close to or less than the coach fares.

Coach travel will probably remain competitive on short, dense routes such as Sydney–Canberra due to the shorter travelling time, and on long thin routes such as Perth–Karratha, where a lack of heavy discounting has allowed coach travel to retain a significant price differential. However, on the long, dense routes such as Melbourne–Brisbane, Melbourne–Perth and Sydney–Cairns, where a concentrated discounting campaign has resulted in air fares near to or below coach fares, coach travel may lose heavily to air travel.

Interestingly, at least one bus company claimed that deregulation had actually helped them, as they sold more tickets for intermediate journeys, which provided a higher return per service (Boalch 1991).

CHAPTER 8 CONCLUDING REMARKS

DEVELOPMENTS SO FAR

Based on the first year's evidence, deregulation of domestic aviation in Australia has, from the consumers' perspective, been very successful. Reliance on market forces and competition, as opposed to regulation, has so far provided clear benefits to consumers.

An important goal of deregulation was increased competition. It appears that the mechanisms put in place to enhance competition have been largely successful. In particular, the emergence of Compass, with a national market share of more than 10 per cent in its first year of operation, is a significant event. A new entrant, almost by necessity, must stimulate competition to gain such a strong foothold in the market place. As such, the emergence of Compass illustrates that although some barriers to entry may be present in Australia's domestic airline industry, such barriers are not impregnable. Also, the two incumbents are now competing with each other to a great degree, much more so now than under regulation. Thus, the goal of providing greater competition appears to have been achieved.

This enhanced competition has provided consumers with strong benefits in the first year of deregulation. Average fares are down significantly, with heavily discounted fares now the norm for customers planning travel in advance. Flight frequency has also increased substantially in the first year of deregulation, with data on actual trips showing a 21 per cent increase from the second quarter 1990 to the second quarter 1991.

Although it is not at this point possible to quantify the change in consumer surplus from deregulation, it is clear that consumer surplus has increased. Previous studies of the impact of deregulation on consumer surplus in other countries have shown that consumer surplus depends primarily on the level of fares, the average time between flights (flight frequency), and the average duration of flights. Australia's domestic deregulation has clearly produced lower fares and shorter average times between flights. Given that on balance there appears to be more non-stop service in the wake of deregulation, the average duration of flights has arguably declined as well. Thus, consumer surplus has unambiguously improved.

It is also notable that consumers have enjoyed these benefits with no serious negative concomitants, unlike their United States counterparts. While record levels of patronage have been recorded in the first year of deregulation, congestion at Australian airports has not been a serious problem. On-time performance for aircraft arrivals has been good and shows no evidence of deterioration with deregulation. Service to customers in-cabin and on the ground appears to be improving, as airlines intensify their efforts to attract customers. Perhaps most importantly, there is no evidence of any deterioration in safety.

It is also noteworthy that the benefits of deregulation have extended to a broad range of markets. In particular, reduced fares and improved service frequency have extended well beyond the Adelaide-Melbourne-Sydney-Brisbane corridor. Destinations such as Perth and Cairns have been among the greatest beneficiaries; indeed, the Northern Queensland tourism industry has enjoyed a dramatic turnaround, largely on the coat-tails of discount fares. While consumer benefits from discounted fares and improved frequencies have often been greatest in the markets where Compass has entered, significant benefits have extended to a broad range of markets. For example, travellers in cities such as Darwin and Hobart have also been clear beneficiaries from deregulation.

From the carriers' perspective, the first year of deregulation has corresponded with disappointing financial performance. According to a Compass press release, Compass reported an operating loss of \$16.5 million for the year ended June 30 1991. For the same year, Australian announced an operating pre-tax profit of \$6.4 million, leaving aside abnormal items. This was obtained on revenue of \$1.585 billion, an increase of 33.8 per cent on the previous year. However, the pre-tax profit for the first six months of the financial year was \$18.82 million, showing a significant decline into losses for the first six months of 1991. While complete data for the Ansett family are not available at this time, preliminary indications are of combined losses for the group.

The ANZ McCaughan Aviation Industry Monitor of October 1991 estimated that the industry could be losing up to \$200 million per year and that this trend could continue for some time.

There have been bright spots as well from the carriers' perspective. There is clearly improved production efficiency in the industry with, on average, lower cost of providing service. This is due to Compass's low cost entry in conjunction with progress by incumbents in reducing costs. In addition, there are ambitious plans by Ansett and Australian to significantly cut costs in the future.

Press reports indicate that the TNT/News Corporation-owned airlines have cut approximately 500 jobs so far in 1991 and rationalised operations generally in the areas of administration and maintenance, with Ansett carrying out some of these functions for Ansett Express, Ansett WA and Eastwest. As a result the Ansett WA maintenance facility in Perth and the Eastwest facility at Tamworth have both been closed (Moffet 1991a). Press reports also indicate that Australian Airlines has a general target of \$100 million in cost cutting, through negotiating

new work practices and revising operations (Moffet 1991b). It cut its staff levels by about 1000 in the six months to October 1991, and claimed in early October that its profitability in the previous month was due to the impact of cost cutting measures taken earlier in the year (Lecky 1991).

This activity provides evidence of how market forces facilitate efficient resource allocation, with new low cost entry and heightened competition forcing firms to reduce costs. Moreover, despite a severe recession, the airlines have achieved record levels of patronage and have maintained high load factors despite the recession and the addition of substantial new capacity.

Although a quantification of economic effects of domestic deregulation involving counterfactual estimates of both consumer and producer surplus is beyond the scope of this paper, the evidence strongly suggests that economic welfare has unambiguously improved so far (refer appendix III).¹

LOOKING TO THE FUTURE

What will the future hold for the Australian domestic aviation industry? It is predicted that benefits enjoyed by consumers in the first year will be sustained over time. This prediction is in contrast to a number of recent media reports which have argued that fare discounting has caused the airlines to lose money. Thus, the argument goes, it is inevitable that discounting and fares return to pre-deregulation levels. This is a specious argument as it neglects two important factors, namely the recessionary impact on business travel and the potential for airlines to further rationalise costs.

It is quite clear that the recession has had a dramatic impact on business travel. This loss of high yield patronage has had serious adverse financial consequences for the airlines. The recession, rather than fare discounting under deregulation, should be seen as the major cause of weak airline financial performance in the past year.

As discussed above, airlines have proceeded with a modicum of cost rationalisation. However, the analysis indicates that there is considerable scope for further cost rationalisation in Australian domestic aviation. Continued competition under deregulation, in conjunction with disappointing financial performance, will force airlines to proceed with efforts to cut costs. Thus, the most likely scenario is that as the economy improves and airlines continue with their efforts to cut costs, industry profits will greatly improve while fare discounting will persist.

1. A counterfactual methodology for assessing the economic effects of deregulation has been laid out by Morrison & Winston (1986) in their analysis of United States airline deregulation. However, applying this methodology in the Australian context is hampered by severe problems in gaining access to necessary data such as carrier costs and profits as well as average yields across the system both prior to and since deregulation.

The analysis suggests that the future direction of competition and market performance will be strongly influenced by future industry structure. Given the existence of a competitive environment, it appears likely that discounting will continue for the foreseeable future. Although the intensity of competition may moderate somewhat with an upturn of the economy and market growth to reduce excess capacity, it is anticipated that fare discounting and levels will resemble more closely the experience in the first year of deregulation than the pre-deregulation experience. Indeed, competition could be further enhanced by the introduction of services by new entrants such as AAA Airlines or Transcontinental.

However, a change in the competitive environment could have a significant effect on the level of discounting. If one airline ceases to operate or is merged with another and there is no new entry, competition will be reduced.² Given that the airlines have different competitive characteristics, the effect upon the market of the exit of a carrier would depend upon which airline disappeared and whether new entry occurred concurrently. If a new entrant no longer exists independently in the market, there could be a serious deterioration in the level of competition. The critical issue is the height of industry entry and operational barriers, which determine whether existing and potential new entrants can survive and thrive. At present, the entry barriers do not appear to be high enough to impede a competitive market structure.

The competitive environment which has existed since deregulation has resulted in significant changes to the structure of the industry. A new entrant has shown that, although some barriers to entry exist, these can be overcome. Moreover, the presence of a new operator, with a different cost structure, operating practices and marketing techniques, has greatly increased the rivalry between all domestic carriers.

It is likely that these structural and behavioural changes are here to stay. In the coming years the ownership of the airlines may change, and the aircraft may have to be repainted in different colours, but the industry is now operating in a fundamentally different way. So far it appears that the Government's deregulation objectives are being met.

2. There could be a role for the Trade Practices Commission in cases where airline mergers or acquisitions infringe upon the Trade Practices Act.

APPENDIX I CHRONOLOGY OF DEVELOPMENTS IN COMPETITION

FARE DISCOUNTING

Lead-up to deregulation

In early 1990, as the airlines began to recover from the pilots' dispute and prepared for deregulation, the number and types of fare discounts began to increase. Typical of this was the introduction by both Australian and Ansett of a 40 per cent discount for travellers over 60 years old. This discount introduced a new dimension in discounting, with a defined end to the period of availability, in this case 30 October, as well as a targeted market.

In late August a more intense discounting campaign began, with Australian, then Ansett, announcing a 50 per cent discount for off-peak return travel. Initially confined to the Sydney–Melbourne route, it was later expanded to all major cities. Conditions limited travel to defined off-peak flights on Tuesdays, Wednesdays and Thursdays, with one weekend away and tickets booked seven days in advance.

On 6 September Australian also introduced a 50 per cent discount on no-frills overnight flights from early October to mid December, between Sydney or Melbourne and the Gold Coast and from Melbourne to Cairns, with one flight on each route per week. Seven days advance booking was required with a stopover of between seven and fourteen days. This initiative introduced some variation in discounting strategies by the two airlines. Eastwest on 9 September announced a 50 per cent discount on its routes, with a thirty day advance purchase and three nights minimum stay.

On 17 September, Ansett introduced a 50 per cent discount on Perth to Melbourne or Sydney night flights from 1 October with no conditions on booking or length of stay, perhaps in response to Compass's proposals to offer such a discount. On 21 September, Australian introduced discounts averaging 55 per cent from 1 November to 16 March for late night and overnight flights between major eastern cities. Conditions included seven day advance booking. Next day Ansett introduced a 40 per cent discount on the Sydney to Melbourne return fare

31 July. Ansett matched the discounts by Australian, and Compass cut them by an additional \$10, which was subsequently matched by Ansett and Australian. This reduced the Adelaide–Melbourne fare to \$75 one way.

On 19 July, Compass offered discount 'Freedom Fares' useable by business travellers, with tickets on sale until 14 August and useable anytime until 30 June 1992, without advance specification of day or time of travel. The Sydney–Melbourne fare was set at \$95. On 23 July, Compass provided special discounts to Perth in the last week of their discount campaign. These included Sydney–Perth \$170 and Melbourne–Perth \$145.

Also on 24 July Australian discounted fares to Perth, from Melbourne at \$300 return and from Sydney at \$350, with tickets on sale to 31 July and useable to 30 April 1992. On the same day Compass discounted fares to Perth by a further \$5, with tickets on sale to 31 July. This reduced Sydney–Perth fares to \$160 and Melbourne–Perth fares to \$140. Compass also announced a discounted Melbourne–Perth return fare of \$250 for sale and use during August 1991.

On 29 July, Ansett extended its discount campaign on 212 routes to 14 August, with the time limit for use remaining 31 March 1992. It also announced an August discount for Perth–Melbourne one way of \$125. Compass and Australian also announced an extension of the booking period to 14 August.

On 5 August, Australian offered a new, shallower discount schedule on sale until 31 October and useable to 30 June 1992. This new discount campaign was aimed at the Compass Freedom Fares, with a similar price list; however, although available for a longer period and with bookings able to be amended, availability of seats was limited unlike the Compass fare.

On 15 August, immediately after the end of the earlier, deeper discount campaign, Ansett announced its new discounts, which matched the new Australian fare schedule. It also announced that its eastern regional airline partners would be offering discounts in conjunction with Ansett's trans-continental discounts. However, on the same day Australian announced that it would be extending the earlier campaign to the end of August, effectively undercutting Ansett.

Compass announced on the following day that it would also extend the deeper discounting until the end of August, with a further \$5 reduction (to \$70) for a Melbourne–Adelaide ticket until the end of November. Conditions included no refunds and payment within 72 hours of booking, but without restriction on availability. Compass also introduced a Business Pass to replace the Freedom Fares, available until 12 September for travel until 30 June 1992, with payment within 72 hours, non-refundable but open-dated, in a company name and transferable to other flights. However fares were more expensive than the Freedom Fares, with Sydney–Melbourne at \$125 rather than \$95, although they were cheaper than Ansett and Australian's standard economy fares at \$229.

On 17 August, Ansett also extended the deeper discounts until 31 August. On the same day Eastwest reintroduced its \$80 Sydney – Gold Coast fare, payable within 72 hours of booking and non-refundable, and available for purchase until 31 August for travel until 30 April 1992. Around this time Australian announced a special \$198 Sydney–Perth return fare with the outward journey to take place on 22 August at 9 pm and the return flight to be booked simultaneously.

On 22 August, Ansett announced a 'Bizsaver Fare', with similar fares and conditions to the Compass Business Pass.

On 25 August both Ansett and Australian announced the introduction of frequent flier programs, each with an entrance fee. Compass did not respond immediately but advertised that its lower cost fares gave much better value than the rewards for the frequent flier schemes. But on 4 September it responded with an offer of two free flights for every one purchased and used prior to 21 September 1991, with the free tickets useable within 12 months but bookable only within 24 hours of flying. This gave equivalent single fares of \$62 Sydney–Melbourne, \$124 Sydney–Brisbane and \$138 Sydney–Perth. And on 5 September, acknowledging that the previous offer was a gimmick, Compass introduced sales of books of between five and fifty tickets at discounts of between 25 and 40 per cent depending on the number of tickets, available indefinitely.

On 11 September, Australian introduced a 'Money Saver' ticket equivalent to the Ansett Bizsaver and the Compass Business Pass which were due to expire the following day, available for purchase until 31 March 1992. The ticket was aimed to counter the Compass bulk buy ticket packs and was cheaper than even the large packs, although with availability restrictions unlike Compass.

Ansett in turn responded to Australian's matching deal by making a two for the price of one offer (to be used prior to 31 October 1991) plus free membership of the Frequent Flier Club for anyone who joined the Ansett Golden Wings Club in September. And Compass responded to Australian's Money Saver ticket with the reintroduction on 16 September of the Compass Freedom Fares, cheaper than the Money Saver ticket, but only available for one week for use until 30 June 1992.

Meanwhile on 17 September, Bryan Grey in a speech to the Bureau of Industry Economics and Business Review Weekly Manufacturing Outlook Conference suggested that airfares would rise in October as demand picks up for the period to January 1992 and the airlines seek to improve their profitability (Power 1991). However on 3 October Ansett and Australian commenced a further round of reductions with discounts available for sale until 20 October and for travel from 20 October until 16 November, with Sydney–Melbourne costing \$89. This was followed by Compass dropping its fares still further, with Sydney–Melbourne coming down to \$79, although Compass's fares were only on sale until 11 October but available for use until the end of summer. Australian and Ansett matched the fares, with tickets still available until 20 October and useable until 30 June 1992. Eastwest also joined the discounting with its cheap fares available for sale until

20 October for use until 16 November. This campaign was not extended, although on 29 October Compass introduced a two-for-one offer available for use until 5 December. On 31 October Ansett introduced an anniversary discount schedule available between 11 November and 15 December, with Sydney–Melbourne down to \$89 from the existing discount rate of \$95. At the same time Compass reintroduced its Freedom Fares, for sale for eight days but open dated and useable for twelve months, with Sydney–Melbourne at \$127. Australian introduced a discount schedule similar to Ansett, also available until 15 December.

COMPETITION FOR SERVICE QUALITY

In the period leading up to deregulation the airlines probably saw much of their future prosperity lying in the first class and business class markets. In that time both Australian and Ansett upgraded their first class, business class and Flight Deck/Golden Wing facilities, and introduced a luggage delivery service to selected hotels. Ansett also introduced currency exchange facilities, self-write tickets for passengers operating an account with the airline and a service allowing passengers to complete hotel registration at the airport. Australian built a conference centre in its facilities in Melbourne to attract interstate business conferences, and introduced an arrangement with selected hotels allowing first and business class passengers to be upgraded to better rooms. Ansett sold a protective carry case for portable computers for \$250, which could then be carried as checked baggage with no excess baggage charge. Valet parking was introduced by both airlines early in 1991.

The newcomer Compass provided economy-only services but with a 86 cm pitch, the same as provided by Australian and Ansett in business class. This generosity was initially countered by reduced elbow room arising from its nine-abreast seating, but this was changed to eight-abreast on all aircraft in mid-1991. It also was the first airline to introduce in-flight videos. Some commentators claimed that Compass was disadvantaged by being unable to provide premium departure lounges, although this was disputed by Compass management.

Eastwest operates its BAe 146s with five-across seating rather than six-across, allowing the widest economy seats in Australia. Both Eastwest and Compass had a significant lead over the other airlines in terms of passenger comfort in economy class.

In an attempt to corner some of the business market, Compass, immediately prior to commencing operations in December 1990, introduced a quasi business class whereby passengers who paid a fare equivalent to the business class fare on the other airlines would be seated at the front of the aircraft and would be given an empty seat next to them. They would be given the same standard of catering as other passengers and would not have access to other facilities. In February 1991, Compass also introduced a charge card for frequent travellers, which provided some priority services, increased carry-on luggage allowance and some discounts for accommodation and car hire.

Also in mid February, Australian introduced two-by-two seating in business class using existing seating at about 86 cm pitch with the middle seat left vacant. At the same time, Ansett initiated a major step forward in the business class battle, by widening the gap between business and economy through the introduction of an upgraded business class which included wider first class seating with a minimum 91 cm pitch in a two-by-two arrangement and better service at no extra charge. In June first class received even better seating and service in a fixed size cabin but with fewer first class seats to make room for more business class or economy seating. For example, the B767s would have eighteen first class and sixteen business class seats.

In mid May Ansett and Australian effectively introduced a four class service when they sought to differentiate between full fare paying economy passengers and passengers paying for discounted tickets. This was achieved by providing extra services for full fare paying passengers, such as drinks and newspapers and, on Ansett's part, by downgrading catering for discount fare passengers.

PRICE VERSUS QUALITY FOR THE BUSINESS MARKET

Price competition for the business market commenced in February 1991 when Compass launched a national advertising campaign aimed at the business market. Recognising the importance of the frequent-flying business market, Compass promoted guaranteed 20 per cent savings on all flights together with a free night's accommodation in February for holders of the Compass Class card.¹ It believed that there were enough cost conscious business travellers to trigger interest similar to that in the leisure market, particularly as Compass's configuration of its aircraft would give its passengers business class legroom.

At the same time Compass introduced a scheme in which companies paid the normal Ansett or Australian economy fare for their employees and the employees were granted the difference between that fare and the lower Compass fare toward future travel.

In mid February Compass went further, advertising a two Compass seat offer for one Ansett full economy fare, to members of Ansett's Golden Wing Club. The offer was open for one month.

In May Australian announced a give-away promotion of overseas holidays and tickets to major events, open to all passengers, while Ansett responded with 1000 seven-night holidays in the Whitsunday Islands, open to all full fare paying passengers. Both airlines also provided discounted combined business class travel/accommodation packages in May.

1. There is a 20 per cent difference between Compass's full fare and the other airlines' full economy fares.

On 19 July, Compass extended its current discounting campaign specifically to cover business travellers when it offered discount Freedom Fares. These tickets were on sale until 14 August and useable anytime until 30 June 1992, without advance specification of day or time of travel. The Sydney–Melbourne fare was set at \$95, slightly higher than the maximum discount fare of the time but significantly less than Ansett's and Australian's standard economy fare of \$229.

On 5 August, Australian offered a new discount schedule on sale until 31 October and useable to 30 June 1992. This new discount campaign was aimed at the Compass Freedom Fares, with a similar price list; however, although available for a longer period and with bookings able to be amended, availability of seats was limited unlike the Compass fare.

Compass also introduced a Business Pass to replace the Freedom Fares, available until 12 September for travel until 30 June 1992, with payment within 72 hours, non-refundable but open-dated, in a company name and transferable to other flights. However fares were more expensive than the Freedom Fares, with Sydney–Melbourne at \$125 rather than \$95.

On 22 August, Ansett announced a Bizsaver Fare, with similar fares and conditions to the Compass Business Pass. It also provided a give-away promotion of a Mercedes Benz for first class passengers and Golden Wing Club Members only.

On 25 August, both Ansett and Australian announced the introduction of frequent flier programs aimed at the business traveller. Each scheme had an entrance fee and a limitation of one year for carryover of credits to reduce the level of contingent liability. Compass did not respond immediately, stating that its lower fares gave much better value than the frequent flier schemes. However, on 5 September Compass introduced sales of books of between five and fifty tickets at discounts of between 25 and 40 per cent depending on the number of tickets, available indefinitely.

On 11 September, Australian introduced a Money Saver ticket equivalent to the Ansett Bizsaver and the Compass Business Pass, available for purchase until 31 March 1992. The ticket was aimed to counter the Compass bulk buy ticket packs and was cheaper than even the large packs, although with availability restrictions unlike Compass. On the same day it also responded to Ansett by introducing a double points bonus for its frequent flier club for the rest of the month. Ansett had a few days earlier introduced a bonus of 1500 kilometres of free air travel for any full fare return journey taken on any Ansett service between 8 September and 30 September, in an effort to entice frequent fliers to sign up for its scheme.

Ansett in turn responded to Australian's matching deal by making a two for the price of one offer (to be used prior to 31 October 1991) plus free membership of the frequent flier club for anyone who joined the Ansett Golden Wing Club in September. Ansett also extended coverage of its frequent flier scheme to include all of its affiliate airlines, including Eastwest. And Compass responded to

Australian's Money Saver ticket with the reintroduction on 16 September of the Compass Freedom Fares, cheaper than the Moneysaver ticket, but only available for one week for use until 30 June 1992.

APPENDIX II FREQUENCY OF SERVICE PROVIDED BY DOMESTIC AIRLINES

This appendix presents data on flight frequencies, passenger numbers, load factors and size of aircraft for the major city pair routes in Australia. The data series covers periods before and after deregulation so that the reader can gauge the impact of deregulation primarily on the flight frequency aspect of service quality.

Table II.1 provides details of the number of trips, passengers and average load factors achieved by the domestic airlines on the top 40 routes from the March quarter 1990 to the June quarter 1991. The data were obtained from the Department of Transport and Communications' aviation statistics data base. The top 40 routes were defined in terms of numbers of passengers (traffic on board) travelling between the selected city pairs during January 1990. The DoTC traffic on board data for the domestic airlines represent passengers travelling non-stop between the designated centres regardless of origin and destination. Passengers on multi-stage journeys (for example Sydney–Melbourne–Adelaide–Perth) are thus recorded on each stage of the total journey.

Table II.2 shows the average size of aircraft used on the top 40 routes during the June quarter 1990 and the June quarter 1991. Average aircraft size was derived by calculating the average passenger numbers per trip from the figures in table II.1 and factoring up by the average load factor on each route. The results thus provide an estimate of the average seating capacity of all of the aircraft operated by domestic airlines on the routes during the June quarters in 1990 and 1991.

Table II.3 shows the number of scheduled flights per week as at mid 1990 and mid 1991 on 82 routes appearing in the published schedules of the domestic airlines.

TABLE II.1 SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>March quarter 1990</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	5 216	602 224	67.1
Brisbane–Sydney	3 258	383 059	74.3
Adelaide–Melbourne	1 816	186 027	74.1
Coolangatta–Sydney	1 556	138 617	81.0
Brisbane–Melbourne	1 200	132 026	73.1
Hobart–Melbourne	1 207	113 486	71.5
Adelaide–Sydney	1 203	122 871	78.9
Melbourne–Perth	804	100 686	77.8
Launceston–Melbourne	1 319	86 475	75.3
Brisbane–Cairns	766	71 361	70.5
Perth–Sydney	598	69 549	68.8
Canberra–Sydney	1 069	94 659	77.1
Canberra–Melbourne	1 119	93 085	69.3
Brisbane–Townsville	619	70 296	73.1
Melbourne–Coolangatta	471	48 465	76.8
Adelaide–Perth	482	45 564	75.3
Adelaide–Alice Springs	330	34 349	76.3
Alice Springs–Darwin	347	30 195	62.4
Brisbane–Rockhampton	340	25 245	68.2
Karratha–Perth	408	22 750	75.4
Hobart–Sydney	260	17 740	75.2
Devonport–Melbourne	361	21 164	83.4
Hamilton Island–Sydney	191	18 705	78.9
Coffs Harbour–Sydney	472	19 318	72.9
Cairns–Townsville	321	24 619	43.2
Brisbane–Hamilton Island	174	13 420	73.6
Brisbane–Darwin	186	12 327	53.0
Kalgoorlie–Perth	368	16 896	61.2
Brisbane–Mackay	174	15 596	65.6
Alice Springs–Cairns	263	16 719	65.3
Alice Springs–Sydney	171	12 912	64.8
Darwin–Kununurra	180	9 877	71.8
Perth–Port Hedland	196	10 573	73.7
Cairns–Sydney	93	7 661	65.5
Devonport–Sydney	187	11 836	89.5
Alice Springs–Ayers Rock	304	14 194	71.2
Geraldton–Perth	206	8 829	63.3
Sydney–Wagga	352	12 712	71.0
Mackay–Rockhampton	173	7 366	55.6
Broome–Perth	114	6 015	72.3
Total March quarter 1990	28 874	2 749 468	70.9

TABLE II.1 (Cont.) SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>June quarter 1990</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	5 624	603 795	65.4
Brisbane–Sydney	3 755	397 768	68.2
Adelaide–Melbourne	1 981	203 788	77.8
Coolangatta–Sydney	1 955	149 634	72.7
Brisbane–Melbourne	1 402	132 364	72.0
Hobart–Melbourne	1 284	101 463	68.0
Adelaide–Sydney	1 206	121 547	77.6
Melbourne–Perth	858	89 262	73.0
Launceston–Melbourne	1 429	70 741	65.2
Brisbane–Cairns	856	70 729	73.3
Perth–Sydney	554	61 039	63.8
Canberra–Sydney	2 043	133 184	69.2
Canberra–Melbourne	1 631	111 842	62.7
Brisbane–Townsville	1 027	92 126	71.0
Melbourne–Coolangatta	497	48 534	70.8
Adelaide–Perth	632	53 714	65.3
Adelaide–Alice Springs	368	41 041	83.1
Alice Springs–Darwin	399	42 280	79.0
Brisbane–Rockhampton	523	33 635	63.6
Karratha–Perth	477	26 754	77.2
Hobart–Sydney	195	11 055	69.6
Devonport–Melbourne	415	20 300	69.1
Hamilton Island–Sydney	239	15 190	59.9
Coffs Harbour–Sydney	578	21 788	64.9
Cairns–Townsville	462	31 368	47.8
Brisbane–Hamilton Island	247	14 566	60.1
Brisbane–Darwin	234	21 109	74.9
Kalgoorlie–Perth	413	18 918	63.1
Brisbane–Mackay	359	21 714	68.1
Alice Springs–Cairns	357	16 114	50.6
Alice Springs–Sydney	354	24 764	61.9
Darwin–Kununurra	190	10 514	73.7
Perth–Port Hedland	215	12 276	79.3
Cairns–Sydney	249	21 330	76.2
Devonport–Sydney	244	13 631	79.6
Alice Springs–Ayers Rock	429	13 833	52.2
Geraldton–Perth	281	10 041	49.9
Sydney–Wagga	514	17 983	70.0
Mackay–Rockhampton	223	8 068	40.6
Broome–Perth	124	6 932	77.6
Total June quarter 1990	34 823	2 916 734	67.7

TABLE II.1 (Cont.) SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>September quarter 1990</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	5 404	618 548	71.9
Brisbane–Sydney	3 912	444 744	74.7
Adelaide–Melbourne	2 165	218 701	73.3
Coolangatta–Sydney	1 976	166 156	81.9
Brisbane–Melbourne	1 604	161 416	79.4
Hobart–Melbourne	1 221	104 428	72.9
Adelaide–Sydney	1 356	129 509	75.0
Melbourne–Perth	878	99 363	80.1
Launceston–Melbourne	1 571	70 657	62.0
Brisbane–Cairns	987	95 425	79.9
Perth–Sydney	571	64 527	79.4
Canberra–Sydney	2 597	151 305	61.3
Canberra–Melbourne	1 855	108 905	56.7
Brisbane–Townsville	1 096	99 612	77.2
Melbourne–Coolangatta	570	64 020	83.9
Adelaide–Perth	685	66 198	76.3
Adelaide–Alice Springs	374	51 463	78.7
Alice Springs–Darwin	404	51 547	74.3
Brisbane–Rockhampton	730	48 916	61.4
Karratha–Perth	499	28 366	75.9
Hobart–Sydney	180	10 595	77.9
Devonport–Melbourne	393	20 677	75.3
Hamilton Island–Sydney	227	17 256	69.5
Coffs Harbour–Sydney	633	25 831	68.8
Cairns–Townsville	448	33 164	58.9
Brisbane–Hamilton Island	287	18 633	64.4
Brisbane–Darwin	282	26 576	78.2
Kalgoorlie–Perth	405	19 920	66.4
Brisbane–Mackay	457	24 567	62.3
Alice Springs–Cairns	336	20 042	58.1
Alice Springs–Sydney	365	31 071	72.4
Darwin–Kununurra	244	13 100	75.3
Perth–Port Hedland	207	11 817	80.2
Cairns–Sydney	312	32 488	88.0
Devonport–Sydney	223	13 856	87.1
Alice Springs–Ayers Rock	464	17 028	61.3
Geraldton–Perth	312	11 910	55.0
Sydney–Wagga	511	18 405	72.1
Mackay–Rockhampton	339	12 634	34.3
Broome–Perth	184	11 509	84.3
Total September quarter 1990	37 264	3 234 885	71.7

TABLE II.1 (Cont.) SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>December quarter 1990</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	5 988	690 323	71.1
Brisbane–Sydney	3 991	454 351	73.4
Adelaide–Melbourne	2 398	233 536	70.1
Coolangatta–Sydney	2 247	196 127	80.8
Brisbane–Melbourne	1 665	159 020	78.6
Hobart–Melbourne	1 390	120 061	75.5
Adelaide–Sydney	1 477	141 240	73.7
Melbourne–Perth	1 159	138 370	78.6
Launceston–Melbourne	1 684	81 045	69.0
Brisbane–Cairns	1 119	90 253	72.2
Perth–Sydney	775	81 976	74.2
Canberra–Sydney	2 531	141 902	57.4
Canberra–Melbourne	1 907	114 134	57.5
Brisbane–Townsville	1 092	82 400	68.0
Melbourne–Coolangatta	679	67 487	80.3
Adelaide–Perth	737	70 388	76.0
Adelaide–Alice Springs	392	48 272	72.9
Alice Springs–Darwin	433	40 257	56.7
Brisbane–Rockhampton	837	51 378	64.8
Karratha–Perth	493	27 977	78.5
Hobart–Sydney	337	20 514	74.9
Devonport–Melbourne	377	22 908	77.1
Hamilton Island–Sydney	277	25 173	71.1
Coffs Harbour–Sydney	662	28 007	69.8
Cairns–Townsville	247	15 092	54.2
Brisbane–Hamilton Island	322	22 217	71.9
Brisbane–Darwin	280	19 594	60.9
Kalgoorlie–Perth	388	19 318	68.6
Brisbane–Mackay	464	25 574	62.2
Alice Springs–Cairns	313	19 606	65.6
Alice Springs–Sydney	345	24 891	64.4
Darwin–Kununurra	200	9 887	65.9
Perth–Port Hedland	254	12 958	71.0
Cairns–Sydney	314	29 251	78.6
Devonport–Sydney	199	11 825	73.4
Alice Springs–Ayers Rock	864	21 698	58.9
Geraldton–Perth	265	11 532	62.4
Sydney–Wagga	507	17 959	70.6
Mackay–Rockhampton	385	13 327	37.6
Broome–Perth	111	6 890	83.3
Total December quarter 1990	40 105	3 408 718	69.3

TABLE II.1 (Cont.) SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>March quarter 1991</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	5 805	687 776	69.9
Brisbane–Sydney	4 048	452 873	71.8
Adelaide–Melbourne	2 147	215 239	74.5
Coolangatta–Sydney	2 303	193 552	73.6
Brisbane–Melbourne	1 548	143 884	76.7
Hobart–Melbourne	1 656	134 058	71.8
Adelaide–Sydney	1 378	130 865	75.7
Melbourne–Perth	1 379	145 585	71.1
Launceston–Melbourne	1 617	96 430	74.5
Brisbane–Cairns	1 094	90 249	74.5
Perth–Sydney	894	91 884	62.8
Canberra–Sydney	2 175	126 120	59.5
Canberra–Melbourne	1 595	106 412	63.3
Brisbane–Townsville	1 072	78 653	66.9
Melbourne–Coolangatta	760	70 940	76.2
Adelaide–Perth	644	58 761	74.2
Adelaide–Alice Springs	379	47 015	74.0
Alice Springs–Darwin	418	36 146	53.0
Brisbane–Rockhampton	609	32 294	62.4
Karratha–Perth	428	23 690	77.3
Hobart–Sydney	426	24 552	67.5
Devonport–Melbourne	366	23 810	79.2
Hamilton Island–Sydney	300	21 071	58.8
Coffs Harbour–Sydney	600	25 311	67.8
Cairns–Townsville	208	11 885	52.4
Brisbane–Hamilton Island	235	14 794	64.6
Brisbane–Darwin	240	16 438	59.7
Kalgoorlie–Perth	321	15 324	66.1
Brisbane–Mackay	414	21 374	58.6
Alice Springs–Cairns	330	19 727	67.2
Alice Springs–Sydney	353	24 749	62.9
Darwin–Kununurra	189	9 274	66.3
Perth–Port Hedland	216	10 805	69.4
Cairns–Sydney	315	26 443	69.4
Devonport–Sydney	181	10 272	69.5
Alice Springs–Ayers Rock	619	21 806	63.0
Geraldton–Perth	210	10 130	70.1
Sydney–Wagga	517	17 101	66.3
Mackay–Rockhampton	301	9 805	37.8
Broome–Perth	92	5 197	77.8
Total March quarter 1991	38 382	3 302 294	67.4

TABLE II.1 (Cont.) SERVICE FREQUENCY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, MARCH QUARTER 1990 TO JUNE QUARTER 1991

	<i>June quarter 1991</i>		
	<i>Trips</i>	<i>Passengers</i>	<i>Average load factor</i>
Melbourne–Sydney	6 468	729 284	66.4
Brisbane–Sydney	4 440	508 135	68.6
Adelaide–Melbourne	2 339	223 192	75.9
Coolangatta–Sydney	2 234	154 892	66.2
Brisbane–Melbourne	1 784	165 834	73.5
Hobart–Melbourne	1 550	119 830	70.0
Adelaide–Sydney	1 422	127 222	74.9
Melbourne–Perth	1 355	132 778	66.7
Launceston–Melbourne	1 440	76 976	70.1
Brisbane–Cairns	1 477	132 640	71.0
Perth–Sydney	945	97 308	62.9
Canberra–Sydney	2 624	143 324	57.9
Canberra–Melbourne	1 751	113 820	61.5
Brisbane–Townsville	1 092	77 164	66.7
Melbourne–Coolangatta	719	56 050	68.7
Adelaide–Perth	657	53 430	66.0
Adelaide–Alice Springs	377	43 341	76.7
Alice Springs–Darwin	422	40 902	67.2
Brisbane–Rockhampton	731	44 327	70.6
Karratha–Perth	485	27 896	81.1
Hobart–Sydney	214	10 610	57.6
Devonport–Melbourne	359	19 154	65.9
Hamilton Island–Sydney	269	20 446	67.3
Coffs Harbour–Sydney	560	22 256	63.7
Cairns–Townsville	161	8 773	51.9
Brisbane–Hamilton Island	223	13 496	65.9
Brisbane–Darwin	251	21 469	72.7
Kalgoorlie–Perth	339	16 336	65.9
Brisbane–Mackay	378	19 772	60.9
Alice Springs–Cairns	309	15 271	56.3
Alice Springs–Sydney	378	30 245	73.6
Darwin–Kununurra	190	10 031	71.4
Perth–Port Hedland	216	10 861	70.7
Cairns–Sydney	394	43 313	79.2
Devonport–Sydney	182	11 354	70.0
Alice Springs–Ayers Rock	370	21 127	59.8
Geraldton–Perth	214	9 484	61.3
Sydney–Wagga	526	19 070	77.4
Mackay–Rockhampton	370	12 690	38.8
Broome–Perth	174	10 113	80.1
Total June quarter 1991	40 389	3 414 216	67.3

a. Based on traffic on board during January 1990.

Source DoTC aviation statistics database.

TABLE II.2 AVERAGE AIRCRAFT SEATING CAPACITY ON TOP 40 ROUTES^a SERVED BY DOMESTIC AIRLINES, JUNE QUARTERS 1990 AND 1991

	<i>Average aircraft size</i>	
	<i>June quarter 1990</i>	<i>June quarter 1991</i>
Melbourne–Sydney	164	170
Brisbane–Sydney	155	167
Adelaide–Melbourne	132	126
Coolangatta–Sydney	105	105
Brisbane–Melbourne	131	126
Hobart–Melbourne	116	110
Adelaide–Sydney	130	120
Melbourne–Perth	143	147
Launceston–Melbourne	76	76
Brisbane–Cairns	113	127
Perth–Sydney	173	164
Canberra–Sydney	94	94
Canberra–Melbourne	109	106
Brisbane–Townsville	126	106
Melbourne–Coolangatta	138	114
Adelaide–Perth	130	123
Adelaide–Alice Springs	134	150
Alice Springs–Darwin	134	144
Brisbane–Rockhampton	101	86
Karratha–Perth	73	71
Hobart–Sydney	81	86
Devonport–Melbourne	71	81
Hamilton Island–Sydney	106	113
Coffs Harbour–Sydney	58	62
Cairns–Townsville	142	105
Brisbane–Hamilton Island	98	92
Brisbane–Darwin	120	118
Kalgoorlie–Perth	73	73
Brisbane–Mackay	89	86
Alice Springs–Cairns	89	88
Alice Springs–Sydney	113	109
Darwin–Kununurra	75	74
Perth–Port Hedland	72	71
Cairns–Sydney	112	139
Devonport–Sydney	70	89
Alice Springs–Ayers Rock	62	95
Geraldton–Perth	72	72
Sydney–Wagga	50	47
Mackay–Rockhampton	89	88
Broome–Perth	72	73
Average	124	126

a. Based on traffic on board during January 1990.

Source DoTC aviation statistics database.

TABLE II.3 WEEKLY SERVICE FREQUENCY ON MAIN ROUTES SERVED BY DOMESTIC AIRLINES, MID 1990 AND MID 1991

<i>Route</i>	<i>Mid 1990</i>	<i>Mid 1991</i>	<i>Percentage change</i>
Adelaide–Alice Springs	30	29	-3
Adelaide–Ayers Rock	30	30	0
Adelaide–Brisbane	163	212	30
Adelaide–Cairns	70	107	53
Adelaide–Canberra	164	189	15
Adelaide–Darwin	28	53	89
Adelaide–Gold Coast	107	125	17
Adelaide–Hobart	97	109	12
Adelaide–Launceston	82	97	18
Adelaide–Melbourne	169	215	27
Adelaide–Perth	51	51	0
Adelaide–Sydney	185	238	29
Adelaide–Townsville	27	68	152
Alice Springs–Ayers Rock	57	36	-37
Alice Springs–Brisbane	33	51	55
Alice Springs–Cairns	27	34	26
Alice Springs–Darwin	38	28	-26
Alice Springs–Melbourne	49	68	13
Alice Springs–Perth	19	28	47
Alice Springs–Sydney	45	63	40
Ayers Rock–Adelaide	30	30	0
Ayers Rock–Brisbane	11	31	182
Ayers Rock–Cairns	19	24	26
Ayers Rock–Canberra	10	31	210
Ayers Rock–Melbourne	33	35	6
Ayers Rock–Perth	15	17	13
Ayers Rock–Sydney	26	30	15
Brisbane–Cairns	115	164	43
Brisbane–Canberra	173	161	-7
Brisbane–Darwin	44	57	30
Brisbane–Hobart	116	119	3
Brisbane–Launceston	91	105	15
Brisbane–Mackay	78	76	-3
Brisbane–Melbourne	327	338	3
Brisbane–Mount Isa	8	24	200
Brisbane–Perth	115	188	63
Brisbane–Proserpine	21	17	-19
Brisbane–Rockhampton	100	95	-5
Brisbane–Sydney	318	351	10
Brisbane–Townsville	89	84	-6
Cairns–Darwin	25	37	48
Cairns–Melbourne	124	180	45
Cairns–Mount Isa	8	0	-100
Cairns–Perth	63	90	43
Cairns–Sydney	126	179	42
Canberra–Darwin	27	50	85

BTCE Report 73

TABLE II.3 (Cont.) WEEKLY SERVICE FREQUENCY ON MAIN ROUTES SERVED BY DOMESTIC AIRLINES, MID 1990 AND MID 1991

<i>Route</i>	<i>Mid 1990</i>	<i>Mid 1991</i>	<i>Percentage change</i>
Canberra–Gold Coast	117	145	24
Canberra–Hobart	99	111	12
Canberra–Launceston	92	107	16
Canberra–Melbourne	170	148	-13
Canberra–Perth	115	171	49
Canberra–Sydney	255	288	13
Darwin–Hobart	15	19	27
Darwin–Melbourne	66	90	36
Darwin–Perth	36	37	3
Darwin–Sydney		80	29
Gold Coast–Hobart		106	18
Gold Coast–Launceston	68	77	13
Gold Coast–Melbourne	158	177	12
Gold Coast–Perth	72	107	49
Gold Coast–Sydney	161	180	12
Hobart–Launceston	7	1	-86
Hobart–Melbourne	105	132	26
Hobart–Perth	72	87	21
Hobart–Sydney	130	139	7
Launceston–Melbourne	97	115	19
Launceston–Perth	72	83	15
Launceston–Sydney	98	117	19
Mackay–Melbourne	70	31	-56
Mackay–Rockhampton	45	43	-4
Mackay–Sydney	69	31	-55
Melbourne–Perth	106	161	52
Melbourne–Proserpine	21	21	0
Melbourne–Rockhampton	81	89	10
Melbourne–Sydney	471	536	14
Melbourne–Townsville	85	85	0
Mount Isa–Townsville	10	32	220
Perth–Sydney	133	191	44
Perth–Townsville	48	75	56
Proserpine–Sydney	21	16	-24
Rockhampton–Sydney	82	88	7
Sydney–Townsville	90	86	-4
Total	7 072	8 346	18

Source Domestic airlines' published schedules.

APPENDIX III WELFARE CHANGES

Economic welfare is generally defined as the sum of producer surplus and consumer surplus. Producer surplus is equivalent to economic profit, while consumer surplus is the area under the demand curve above price. The evidence is convincing that deregulation has brought about lower prices and reduced costs. With reference to figure III.1, assume that prior to deregulation prices were at P_1 while costs were at C_1 (to simplify the diagram we assume marginal costs equal average costs, although the argument in no way hinges on this simplification). Producer surplus is then area b , while consumer surplus is area a . Now suppose that deregulation causes both costs and prices to fall to a level $P_2 = C_2$. Producer surplus will fall to zero; however consumer surplus is the areas a, b, c, d, e, f . There is a net gain in economic welfare of areas c, d, e, f .

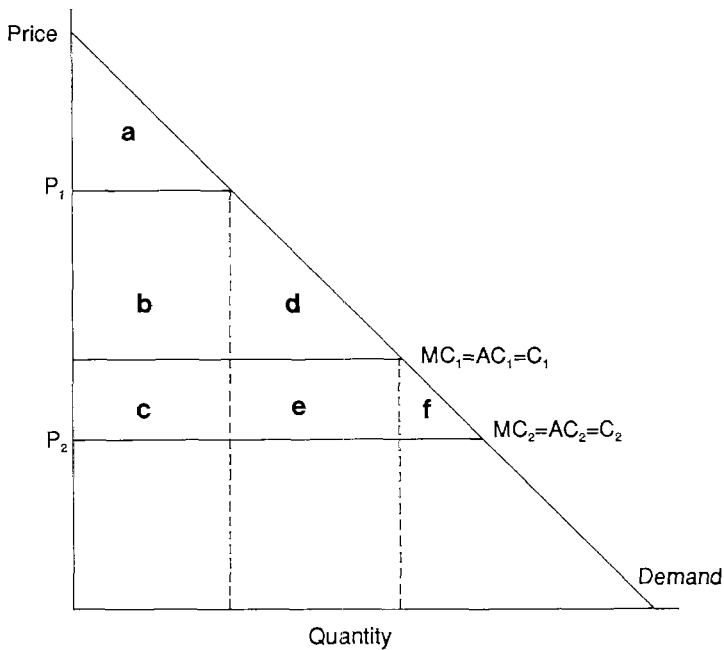


Figure III.1 Welfare changes resulting from deregulation

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ABS	Australian Bureau of Statistics
AFR	<i>Australian Financial Review</i>
BTCE	Bureau of Transport and Communications Economics
CofA	Commonwealth of Australia
DCN	<i>Daily Commercial News</i>
DoTC	Department of Transport and Communications
PSA	Prices Surveillance Authority
US DOT	United States Department of Transportation

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ABBREVIATIONS

ABS	Australian Bureau of Statistics
ASK	available seat kilometre
BTCE	Bureau of Transport and Communications Economics
BTE	Bureau of Transport Economics
CAA	Civil Aviation Authority
DoA	Department of Aviation
DoTC	Department of Transport and Communications
FAC	Federal Airports Corporation
IAFC	Independent Air Fares Committee
PSA	Prices Surveillance Authority
RPK	revenue passenger kilometre
RPT	regular public transport
TAA	Trans - Australia Airlines
ANA	Australian National Airways
ATI	Ansett Transport Industries
IAFC	Independent Air Fares Committee
VFT	Very Fast Train