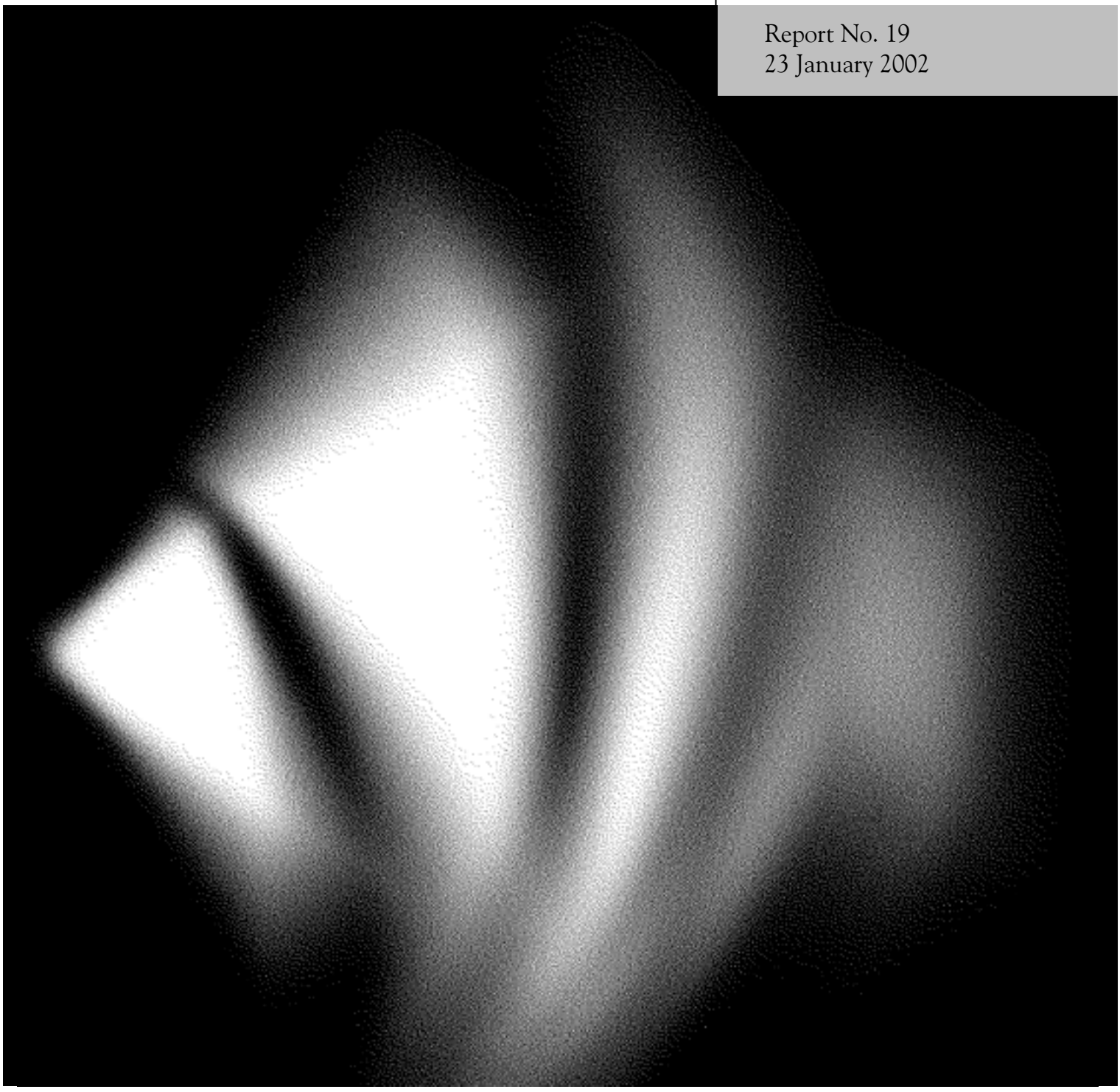
PRODUCTIVITY COMMISSION

Price Regulation of Airport Services

Inquiry Report

Report No. 19
23 January 2002



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The Productivity Commission

The Productivity Commission, an independent Commonwealth agency, is the Government's principal review and advisory body on microeconomic policy and regulation. It conducts public inquiries and research into a broad range of economic and social issues affecting the welfare of Australians.

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PRODUCTIVITY COMMISSION

January 2002

The Honourable Peter Costello MP
Treasurer
Parliament House
CANBERRA ACT 2600

Dear Treasurer

In accordance with Section 11 of the *Productivity Commission Act 1998*, we have pleasure in submitting to you the Commission's final report on *Price Regulation of Airport Services*.

Yours sincerely

Gary Banks	Richard Snape	Neil Byron
Chairman	Deputy Chairman	Commissioner

Terms of reference

I, ROD KEMP, Assistant Treasurer, pursuant to Parts 2 and 3 of the *Productivity Commission Act 1998*, hereby refer Prices Regulation of Airports to the Commission for inquiry and report within 12 months of receipt of this reference. The Commission is to hold hearings for the purpose of the inquiry.

Background

2. During 1997 and 1998, long-term leases (50 years with an option to renew for a further 49 years) were sold over seventeen airports previously operated by the Federal Airports Corporation, to private sector operators. In July 1998 two wholly Australian Government-owned companies were formed to acquire leases over the four Sydney basin airports (Sydney, Bankstown, Camden, Hoxton Park) and Essendon airport.

3. All 22 of the leased airports are regulated under the *Airports Act 1996* and twelve of the airports (Adelaide, Alice Springs, Brisbane, Canberra, Coolangatta, Darwin, Hobart, Launceston, Melbourne, Perth, Sydney and Townsville) are currently subject to prices regulation under the *Prices Surveillance Act 1983*.

4. Except for Sydney Airport, the prices regulation of the airports comprises a CPI-X price cap on declared aeronautical services, prices monitoring of aeronautical related services, and special provisions for necessary new investment at airports. At Sydney Airport aeronautical services are subject to prices surveillance and aeronautical related services are subject to price monitoring. The arrangements are administered by the Australian Competition and Consumer Commission.

5. In establishing the current prices regulations in 1997, the Government announced that the arrangements would only apply for the first five years of operation of the lease. Subsequent regulation would be determined after a review of the arrangements before the end of the first five year period, with the review to be based on the premise that the price caps applied to aeronautical services will no longer operate.

6. The purpose of this inquiry is to examine whether new regulatory arrangements, targeted at those charges for airport services or products where the airport operator has been identified as having most potential to abuse market power, are needed to ensure that the exercise of any such power may be appropriately counteracted.

Scope of Inquiry

7. The Commission is to report on whether there is a need for prices regulation of airports, and the appropriate form of any prices regulation, taking into account the following principles:

(a) the CPI-X price cap applied to aeronautical charges during the first five year period of private ownership will no longer operate;

(b) future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power;

(c) airport operators may propose to the inquiry alternative approaches to prices regulation which would provide equal or better protection to users;

(d) prices regulation should minimise compliance costs on airport operators and the Government;

(e) prices regulation should promote the efficient operation of airports;

(f) prices regulation should facilitate benchmarking comparisons between airports, competition in the provision of services within airports (especially protecting against discrimination in relation to small users and new entrants), and commercially negotiated outcomes in airport operations; and

(g) the Commission may recommend more effective forms of prices regulation than are currently in place, where this may be necessary.

8. In making its recommendations, the Commission is to:

(a) review the operation of the existing prices regulation of airports;

(b) identify the rationale for any future prices regulation at airports;

(c) identify relevant alternatives to the current arrangements, including the prices oversight arrangements at relevant airports in other countries, and the extent to which these alternatives would achieve the rationale in (b);

(d) analyse and, as far as practical, quantify the benefits, costs and economic and distributional impacts of the current arrangements and the alternatives identified in (c);

(e) identify the different groups, including the travelling public, likely to be affected by the current prices oversight arrangements and the alternatives identified in (c); and

(f) list the individuals and groups consulted during the review and outline their views.

9. In undertaking the review, the Commission is to advertise nationally, consult with key interest groups and affected parties, and produce a report.

10. The Government will consider the Commission's recommendations, and the Government's response will be announced as soon as possible after the receipt of the Commission's report.

ROD KEMP
21 December 2000

Contents

Abbreviations and explanations

Abbreviations

AAA	Australian Airports Association
AAL	Adelaide Airport Limited
ACA	Airport Coordination Australia
ACCC	Australian Competition and Consumer Commission
ACTO	Australian Cargo Terminal Operators
Airports Act	*Airports Act 1996*
APAC	Australia Pacific Airports Corporation
APAM	Australia Pacific Airports (Melbourne)
APS	Australian Protective Services
ASA	Airservices Australia
BAC	Brisbane Airport Corporation
BARA	Board of Airline Representatives of Australia
BTE	Bureau of Transport Economics
BTR	Bureau of Tourism Research
CAA	Civil Aviation Authority (UK)
CASA	Civil Aviation Safety Authority
CBD	Central business district
CC	Commerce Commission (NZ)
CPA	Competition Principles Agreement
CPI	Consumer Price Index
DoTRD	Department of Transport and Regional Development
DoTRS	Department of Transport and Regional Services
FAC	Federal Airports Corporation

GAA	General aviation aircraft
GATS	General Agreement on Trade in Services
IATA	International Air Transport Association
IC	Industry Commission
ICAO	International Civil Aviation Organization
JUHI	Joint user hydrant installation
MTAA Super Fund	Motor Trades Association of Australia Superannuation Fund
MTOW	Maximum take-off weight
MUDT	Multi-user domestic terminal
NCC	National Competition Council
NEC	National Electricity Code
NECG	Network Economics Consulting Group
NNI	Necessary new investment
NTTC	Northern Territory Tourist Commission
OECD	Organisation for Economic Co-operation and Development
PC	Productivity Commission
Pers. comm.	Personal communication
PS Act	*Prices Surveillance Act 1983*
PSA	Prices Surveillance Authority
RPT	Regular public transport
RRCB	Revised Regulatory Cost Base
SACL	Sydney Airports Corporation Limited
s.	Section
ss	Sections
Sub.	Submission
Sydney Airport	Sydney Kingsford Smith Airport
TP Act	*Trade Practices Act 1974*
Trans.	Transcripts

TRL	Transport Research Laboratory
VFR	Visiting friends and relatives
VHCA	Victorian Hire Car Association
WAC	Westralia Airports Corporation
WACC	Weighted average cost of capital

Explanations

Recommendations

RECOMMENDATION

Recommendations in the body of the report are highlighted using bold italics with a heading, as this is.

Findings

FINDING

Findings in the body of the report are paragraphs highlighted using italics with a heading, as this is.

Glossary

Access undertaking The terms and conditions under which an airport owner will provide access, as agreed with the Australian Competition and Consumer Commission under Part IIIA of the *Trade Practices Act 1974*.

Aeronautical services Services provided by infrastructure that facilitates aircraft movements (eg runways), and passenger processing facilities.

Common-user terminals Terminals and associated infrastructure managed by the airport operator and used (potentially) by a number of different airlines. All international terminals at core-regulated airports are common-user terminals as are some domestic terminals.

Core-regulated airports	Leased airports designated as such under the *Airports Act 1996*. They comprise Adelaide, Alice Springs, Brisbane, Canberra, Coolangatta, Darwin, Hobart, Launceston, Melbourne, Perth, Sydney and Townsville airports.
Dual till	An arrangement for setting airport charges whereby only the costs and revenues of providing aeronautical services are included in the assessment of allowable aeronautical prices. In other words, aeronautical services are priced on a 'stand-alone' basis, without regard to any net revenues from non-aeronautical services.
Ground-handling services	Handling services directly associated with the aircraft including cleaning and catering, provision of power and fuel, and loading and unloading of baggage and freight.
Load factor	The number of passengers carried expressed as a percentage of the number of seats available.
Locational rent	Payments to land above opportunity cost that derive from its locational advantages for a particular use. Locational rents are consistent with efficient use of a scarce resource and do not reflect an abuse of market power (which occurs where scarcity is *created by the supplier*).
Non-aeronautical services	Services provided by or at airports that are not aeronautical services (eg freight facilities, car parking, and retail shops and food outlets).
Passenger movement	A passenger arriving or departing on a scheduled regular public transport service.
Phase 1 airports	Airports leased to private operators in 1997 — Brisbane, Melbourne and Perth.
Phase 2 airports	Airports leased to private operators in 1998 — Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston, Townsville, Mount Isa, Tennant Creek, Archerfield, Jandakot, Moorabbin and Parafield.
Regional ring fence	A feature of the Slot Management Scheme 1998 for Sydney Airport which effectively creates a separate pool for regional slots.

Revenue passengers	Passengers paying any fare on a scheduled regular public transport service, including passengers travelling on tickets acquired through frequent flyer programs.
Single till	An arrangement for setting airport charges whereby all airport revenues and costs are taken into account in setting aeronautical prices. Allowable aeronautical prices are set on a 'residual basis', after subtracting from total airport costs the revenue derived from non-aeronautical activities.
Slot	A permission for an aircraft movement.
Weight-based charges	Airport charges for the use of airport services based on the weight of the aircraft (usually maximum take-off weight).
Yield management	Discriminatory pricing by airlines designed to maximise revenue from each flight.

Key messages

- Detailed analysis of the demand and supply characteristics of airport markets reveals that only four airports — Sydney, Melbourne, Brisbane and Perth — have substantial market power.
  - Adelaide and, to a lesser extent, Canberra and Darwin, have moderate market power.
  - Any market power of other airports does not warrant special regulation.
- The airport services where market power is strongest include facilities for aircraft movements (runways, taxiways, aprons) and 'front-door' vehicle access.
- The scope for airports with market power to use (or abuse) that power is constrained by commercial pressures and opportunities, particularly the substantial 'non-aeronautical' income to be had from promoting airline passenger traffic.
- In these circumstances, because of the risks and potential costs of strict price controls relative to more light-handed price regulation, such controls are judged not to be required even at the four airports with substantial market power.
- The uncertain outlook for the aviation market since September 2001 also calls for a more flexible approach, as the Government has recognised in removing price caps from other key airports, including Adelaide, Canberra and Darwin.
- The Commission's preferred approach is to put in place a light-handed regulatory regime (additional to general competition law) in which all seven airports assessed as having some market power would have their pricing and other behaviour monitored for a 'probationary' five-year period.
  - A review towards the end of the five years would assess the need for continued regulation (if any) of these airports.
  - Monitoring would promote more productive commercial relationships between airports and airlines, while providing the discipline of the possible reintroduction of stronger regulation after five years.
- If the Government nevertheless were to opt for a stricter form of price regulation, CPI-X price caps are preferred because they can offer incentives for efficient airport operation.
  - Unlike the existing price caps, however, any new price caps should be explicitly based on a 'dual till' and factor in anticipated investment.
  - Conventional price caps would be confined to Melbourne, Brisbane and Perth airports. For a capacity-constrained Sydney Airport, arrangements should not be such as to force prices down.
- Under both options, the general access and anti-competitive conduct provisions of the Trade Practices Act would apply to all airports.
- Whatever the regulatory framework decided for Sydney Airport, that policy, in particular the pricing and investment provisions, should be clearly and publicly articulated to bidders so that the sale price can adequately reflect it.

Overview

Is price regulation of airport services required at privatised airports? If so, in what form? The main purpose of this inquiry has been to address these questions, including for the soon-to-be-privatised Sydney Airport.

Though the terms of reference encompass all Australian airports, the Commission has mainly focused on the 'core-regulated' airports: that is, the eleven so-called Phase 1 and Phase 2 privatised airports plus Sydney Airport (box 1). These twelve airports account for 96 per cent of international, 93 per cent of domestic and 63 per cent of regional passenger movements.

Box 1 **Price-regulated airports**

Phase 1 airports are the three major capital city airports that were privatised in 1997: Melbourne, Brisbane and Perth. Prices at each of these airports have been regulated.

Phase 2 airports comprise 14 smaller airports that were privatised in 1998. Only eight of these have been subject to price regulation: Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston and Townsville.

Sydney Airport, which was leased in 1997, but not privatised, also has been subject to price regulation.

The twelve airports that have been subject to price regulation are designated as *core-regulated* airports in the *Airports Act 1996*.

The Commission's task

In making its recommendations, the Commission is required to take into account a number of principles. Most of these were foreshadowed when the airport leases were sold in 1997 and 1998. The thrust of the principles is that any future price regulation should be targeted at those aeronautical services and airports where operators are assessed as having most potential to abuse market power. Complementary objectives include:

- fostering efficient operation of airports and commercially-negotiated outcomes;
- minimising compliance costs on all parties; and

- promoting transparency and competition.

Box 2 **Some key terms**

Aeronautical services — services provided by infrastructure that facilitates aircraft movements (eg runways), and passenger processing facilities.

Non-aeronautical services — services provided by or at airports that are not aeronautical services (eg freight facilities, car parking, and retail shops and food outlets).

Single till — an arrangement for setting airport charges whereby all airport revenues and costs are taken into account in setting aeronautical prices. Allowable aeronautical prices are set on a 'residual basis', after subtracting from total airport costs the revenue derived from non-aeronautical activities.

Dual till — an arrangement for setting airport charges whereby only the costs and revenues of providing aeronautical services are included in the assessment of allowable aeronautical prices. In other words, aeronautical services are priced on a 'stand-alone' basis, without regard to any net revenues from non-aeronautical services.

Locational rent — payments to land above opportunity cost that derive from its locational advantages for a particular use. Locational rents are consistent with efficient use of a scarce resource and do not reflect an abuse of market power (which occurs where scarcity is *created by the supplier*).

Thus the key tasks for the inquiry have been to:

- analyse the functions of airports and the markets in which they operate;
- identify the objectives of price regulation;
- identify which airports have significant market power and in which services;
- assess the potential for exploiting market power by those airports, including any commercial constraints;
- identify and assess options for future price regulation, taking into consideration the performance of existing price regulation; and, finally,
- determine the extent and type of future price regulation required, if any.

Background to the inquiry

Prior to 1997, most major airports were operated by the Federal Airports Corporation (FAC). The FAC set its landing and terminal charges on a network-wide, 'single-till' basis (box 2). More profitable airports subsidised unprofitable or

less profitable ones, and revenues from complementary (non-aeronautical) activities, such as car parking and retailing, subsidised aeronautical services.

In 1997 and 1998, 50-year leases for 17 major Australian airports (excluding Sydney) were sold to private operators. The stated rationale was to 'improve the efficiency of airport investment and operations in the interests of users and the general community, and to facilitate innovative management' (Harris 1997, p. 2). Most leases were sold for individual airports.

Competition was to be encouraged by restricting cross-ownership of certain airport pairs and limiting airline ownership to 5 per cent. In addition, the Government noted that the single-till pricing approach that had been followed by the FAC would not be mandated. Individual airport operators could retain profits, at their discretion, from their non-aeronautical activities.

At the same time, however, there was a concern that privatised airports might abuse their market power with respect to aeronautical services. Thus, privatisation was accompanied by what were described as *transitional* price-regulation measures, designed to allow all parties to adjust to the new operating environment for airports.

Price regulation comprised a five-year, CPI-X annual cap on prices for aeronautical services at 11 of the largest privatised airports — Melbourne, Brisbane, Perth, Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston and Townsville. Essentially, these arrangements extended, for the first five years of privatisation, the FAC aeronautical prices that were in place prior to privatisation. The cap was complemented by cost pass-through provisions for 'necessary new investment' and government-mandated security services as well as by quality monitoring and by special access arrangements designed to facilitate new airline entrants.

Though Sydney Airport was not privatised, its lease was transferred to the government-owned Sydney Airports Corporation Limited (SACL). It has been subject to prices notification under the *Prices Surveillance Act 1983* (where any price increases have to be vetted by the ACCC) but not to a price cap or any requirement to reduce aeronautical charges each year.

Developments since the draft report

The Commission released its draft report on 24 August 2001. In the following month, the Australian aviation market was rocked by two events: the terrorist attacks in the United States and the cessation of services by Australia's second-largest carrier, Ansett. Immediately following these events, airports reported

reductions in traffic of 30–40 per cent, though the level of services has recovered somewhat since then. The effect of reduced domestic and international services on several airports (especially the smaller Phase 2 airports) prompted the Commonwealth Government on 5 October 2001 to announce major changes to airport price regulation. It described these changes as 'consistent with the findings in the Productivity Commission's draft report'.

- Price caps on aeronautical charges at the eight Phase 2 airports were removed. They were replaced with price monitoring of aeronautical charges at Adelaide, Darwin and Canberra airports while remaining Phase 2 airports were no longer subject to any price regulation.
- Phase 1 airports (Melbourne, Brisbane and Perth) remained subject to price caps but were allowed to implement one-off average price increases for price-capped services of up to 6.2, 6.7 and 7.2 per cent, respectively.

When announcing the changes, the Minister for Financial Services and Regulation said that 'the Government will give further consideration to the prices oversight arrangements at airports in the light of developments in airport prices and the Productivity Commission's final report' (Hockey 2001).

Australian airports

Australian airports not only provide a range of services to airlines, they also provide or facilitate 'non-aeronautical' services to passengers and others (box 3).

Box 3 **Facilities and services provided by airports**

Aircraft movement facilities include runways, taxiways and aprons.

Passenger processing facilities include aerobridges, baggage systems, check-in counters, public areas in terminals, flight information displays and landside roads. (Australian airports do not provide air traffic control services — these are the responsibility of Airservices Australia.)

Most domestic terminals at the main Australian airports have been operated by the two major domestic airlines under long-term lease arrangements (up to 30 years), established well before airport privatisation. Common-user domestic terminals constructed more recently are operated by the airports, as are international terminals.

Non-aeronautical services include restaurants, hotels, shopping and car parking.

Since privatisation, the proportion of airport revenue earned from non-aeronautical activities has increased from about 62 per cent to around 69 per cent of total

revenue of the 11 privatised core-regulated airports. Sydney Airport earned about 60 per cent of its revenue from non-aeronautical activities in 2000-01.

Aeronautical charges

There are three main types of aeronautical charge levied by Australian airports.

- A landing charge that covers use of runways, taxiways and aprons. Landing charges at airports still subject to price caps averaged around $6.30 per aircraft tonne (GST inclusive) in January 2002.
- A terminal charge at airport-operated terminals (averaging about $4 per international passenger at the larger international privatised airports).
- Additional charges sometimes are levied for aircraft parking ($50 per day at Melbourne Airport, but around $10 per day is more common).

Aeronautical charges at Australia's price-capped airports appear low by international standards. The recent ACCC-vetted price increases for Sydney Airport (of around 100 per cent) still leave that airport's charges for international flights below the average for major world airports, even though Sydney's new charges are now considerably higher than regulated charges at Melbourne, Brisbane and Perth airports.

Since the removal of price caps for Phase 2 airports on 5 October 2001, list prices have risen at most of those airports (Adelaide, Alice Springs, Canberra, Coolangatta, Darwin and Townsville). The airport operators claim that this has been necessitated by significantly lower traffic volumes, and consequently higher unit costs, and increased security costs. At Hobart and Launceston airports, charges have remained at levels that applied under price caps.

Charges for regular public transport (RPT) flights at other Australian airports often are not publicly available because rates are negotiated with airlines. For those that are available, comparisons are very difficult because the airports concerned, which are mostly owned by local municipalities, usually supply terminal and other services not supplied by core-regulated airports, and their traffic volumes typically are much lower.

Why regulate airport prices?

The *prima facie* rationale for price regulation of airports (additional to the general provisions of the *Trade Practices Act 1974* (TP Act)) is their perceived market

power — that is, an ability to raise prices above the efficient costs of supplying aeronautical services — and their scope to use it.

Such pricing could increase airfares and reduce the consumption of air travel below efficient levels. Airports that exercise market power could earn excessive profits or operate inefficiently; they also could allow quality to deteriorate and not invest appropriately. It is also possible that market power could be used selectively to deny access to the airport, either by way of higher prices or by imposing other unacceptable conditions of access.

Any abuse of market power would also have distributional effects, involving transfers between airports, airlines and consumers. However, while such transfers may be substantial in total, there do not appear to be major differences between income profiles of the various groups. Moreover, attempting to use airport charges to redistribute income would be a very blunt and inefficient approach. Hence, in assessing the need for appropriate regulation, it has been the possible efficiency, rather than distributional, outcomes that have guided the Commission's assessment.

The existence of market power is not, of itself, sufficient justification for price regulation of airports. Price regulation should promote more efficient outcomes than those otherwise likely to be achieved by the market.

Which airports have market power?

The terms of reference indicate that regulation should be targeted at only those airports and those aeronautical services where there is most potential to abuse market power. This will depend on barriers to entry to the industry and the sensitivity of users to price rises.

Barriers to entry are significant

In most Australian cities (and cities of similar size elsewhere) there is only one airport catering for RPT services. This is because:

- basic airport infrastructure, such as runways and taxiways, must be used as a package and thus requires a single provider of a large, lumpy investment;
- there is some evidence of economies of scale, at least in relation to runways and taxiways, though economies of scale for the airport as a whole may be exhausted at quite low levels of output;

- most major aeronautical assets, other than land, typically cannot be used for other purposes and thus, once invested, are 'sunk'. This may deter new entrants by raising the cost of failure; and
- airports require very large land allocations and buffer zones for environmental and safety reasons and this may make duplication prohibitively costly (or, for planning and regulatory reasons, impossible) in convenient locations.

Network or coordination benefits also accrue to airlines and their passengers from using one airport. Airlines can coordinate aircraft and passenger transfers at lower cost and passengers do not have the inconvenience of transferring between airports. Even given the choice of two similar (uncongested) airports serving the same destination, airlines would be unlikely to spread similar services across both.

Though these natural monopoly characteristics of airports arise from efficiency benefits (one airport in a particular city being able to provide services at lower cost than two), they inevitably also limit scope for direct competition in the provision of airport services for that city.

The strength of demand for particular airports varies

Lack of effective competition between airports in a particular location is a necessary but not sufficient condition for market power. The degree of market power also will depend on the sensitivity of users to an increase in an airport's charges. This, in turn, depends on:

- the extent to which airfares rise if airport charges increase, which in turn depends on the share of airport charges in the airfare and the supply responses of other input providers to air services; and
- the sensitivity of passengers to changes in airfares to a particular destination and airport (which depends on their willingness to substitute other destinations or alternative transport and communication modes and the scope for using another airport).

On average, charges for airport services account for a small share of airfares. In the absence of any substitution possibilities, this suggests low price sensitivity and strong market power. But, substitution possibilities for some airports may be quite strong, so the sensitivity of some travellers to price changes at *particular* airports may still be quite high.

For example, tourists are more likely to compare package prices for different destinations and to substitute different travel modes to a destination (self-drive versus flying, for example). International tourists may be flexible as to their

entry/exit point. On the other hand, destination-specific, time-sensitive business travellers are likely to be less responsive to price changes than tourists. But even business travellers are likely to have some scope to adjust their frequency of travel or, increasingly, to use forms of electronic communication such as teleconferencing.

Assessment of substitution possibilities and market power

Table 1 summarises the Commission's assessment of substitution possibilities for domestic passengers at the 12 core-regulated airports. This is based on an analysis of the types of traveller served by particular airports.

Table 1 **Summary of demand and competition characteristics of core-regulated airports for domestic passenger traffic**

Airport	*Main market segment to destination for interstate travel*	*Potential for destination substitution*	*Potential for modal substitution*	*Potential for airport substitution*	*Overall degree of market power*
Adelaide	Business/VFR[a]	Low	Moderate	Low	Moderate
Alice Springs	Holiday	High	Moderate	High	Low
Brisbane	Business/VFR	Low	Moderate	Low	High
Canberra	Business/VFR	Low	High	Low	Low/Moderate
Coolangatta	Holiday	High	Moderate	High	Low
Darwin	Holiday	High	Moderate	Low	Low/Moderate
Hobart	Holiday	High	Moderate	High	Low
Launceston	Holiday	High	Moderate	High	Low
Melbourne	Business/VFR	Low	Moderate	Low	High
Perth	Business/VFR	Low	Low	Low	High
Sydney	Business/VFR	Low	Moderate	Low	High
Townsville	Holiday	High	Moderate	Low	Low

[a] Visiting Friends and Relatives.

The Commission agrees with the ACCC that Alice Springs, Coolangatta, Hobart and Launceston airports appear to have little market power because they rely heavily on the tourism market and there is scope for competition from 'nearby' airports. The Commission also considers that Townsville Airport has limited market power because it relies on the holiday market (and there is scope for competition from other holiday destinations and other transport modes).

On the other hand, it appears that Brisbane, Melbourne, Perth and Sydney airports possess significant market power in domestic markets due to high proportions of business travellers and those 'Visiting Friends and Relatives', and their status as the main international ports of arrival and departure in the country. Competition among those airports for international traffic is likely to moderate, but not eliminate, this latter effect.

The degree of market power held by Adelaide, Canberra and Darwin airports is less clear. On balance, the Commission's assessment is that these airports appear to have at most a moderate degree of market power.

More than 200 non-core-regulated airports cater for some RPT services (rather than just general aviation). No charges are imposed at some regional airports, while at others charges can be very high. Of themselves, high charges do not necessarily indicate an abuse of market power. While the Commission has not been able to assess the likely market power of individual non-core-regulated airports, the small traffic volumes of most regional airports suggest that unit costs would often be high. High charges at many regional airports may also reflect revenue-raising objectives of the local municipalities that own them. Privately-owned airports servicing resorts generally operate in the highly competitive tourist market.

In which services do the key airports have market power?

For those airports assessed to have a moderate to high degree of market power, that power will extend to the bundle of services for which there are few alternative suppliers and which an airline and its passengers must consume. The Commission's assessment of the degree of market power across the range of services provided by airports is summarised in table 2.

Table 2 **Market power in particular airport services**

Service	*Degree of market power*
Aircraft movement facilities	High
Passenger movement facilities	Moderate/High
Lounge space (VIP and business)	Low
Vehicle access facilities	High
Car parking	Low/Moderate
Taxi facilities	Low/Moderate
Aircraft refuelling	Moderate/High
Aircraft light/emergency maintenance sites	Moderate
Aircraft heavy maintenance facilities	Low
Flight catering facilities	Low
Freight and ground equipment storage sites	Low
Freight facility sites and buildings	Low
Waste disposal facilities	Low
Administrative office space	Low/Moderate
Commercial and retail activities	Low

Market power appears to be strongest for:

- facilities for aircraft movements, including access to runways, taxiways and aprons; and
- vehicle access, including front-door access to the airport for passengers, transport providers and off-airport car-parking providers.

A range of other airside services are necessary for passenger and cargo processing, but there is some, albeit limited, discretion as to quality and quantity of service — for example, aerobridges, check-in facilities and baggage handling. This suggests that an airport's market power in these services may be somewhat less than for services provided by aircraft movement facilities but, in most cases, it would still be significant.

The degree of airport market power in relation to aircraft refuelling has been a particularly contentious issue. For some flights and some destinations, there is a degree of choice as to where an aircraft refuels, but this discretion is limited and, at more remote airports, probably non-existent.

Areas where market power is likely to be more limited include international airline lounges, catering and freight storage facilities, and services that can easily be located off-airport. Airports (and State Governments) also compete keenly for aircraft heavy maintenance facilities.

While passengers value the convenience of shops and food outlets at airports, the purchase of these services in most cases is likely to be highly price sensitive. The services do not have to be consumed as part of the airport 'bundle' and there are many alternatives to buying at the airport. Passengers also have choices in relation to duty-free purchases — destination, transfer, or origin airports; on-board duty-free and downtown outlets; and whether to buy duty free or not.

Passengers require transport to and from an airport but typically there is a choice of several modes (taxi, self-drive, public transport) that are not provided by the airport. For those who require parking, major airports (eg Sydney and Melbourne) have substantial off-airport competition, at least for long-term (one day or more) parking. Higher parking charges at airports relative to off-airport locations appear largely to reflect greater convenience. Nevertheless, by controlling access to their 'front door', airport operators could attempt to limit competition from off-airport providers of car parking or other transport providers (eg taxis).

The potential for abuse of market power

Assessing the likely conduct of airports with market power is prerequisite to assessing whether regulation is required and, if so, in what form. There are two aspects that need to be considered: first, the existence of any constraints on the abuse of market power; and second, the economic consequences of exercising market power.

Commercial constraints on the abuse of market power

While some major Australian airports appear to have substantial market power in the core aeronautical services they provide, they may not use this power to its full extent, because of commercial incentives and constraints.

Non-aeronautical revenues can constrain aeronautical pricing

There is fairly strong evidence that the potential earnings from passenger spending on non-aeronautical services (including retailing, car parking and restaurants) provide airports with an incentive to encourage extra passengers to the airport.

- In 1999-00, for every dollar of operating profit earned from the provision of aeronautical services at Australia's major international airports, more than four dollars of profit were earned from non-aeronautical activities. Though there are some issues regarding the classification of earnings (eg lease payments which for domestic terminals are classified as non-aeronautical), and the data do not necessarily indicate the incremental earnings from an extra passenger, non-aeronautical activities clearly are of great importance to airports.
- There are numerous examples of financial incentives being offered by airports to encourage additional airline services, suggesting that most airports consider that airlines are responsive to such incentives. Airports also regard service quality as an important factor contributing to passenger spending (box 4).

Box 4 **Attracting customers to airports**

'High levels of customer satisfaction drive greater turnover of discretionary expenditure in airports and this is highly profitable.' And '[Airline] market development is expensive and is often recognised as a barrier to entry to new carriers. Melbourne Airport has been in active partnership with successive Victorian Governments in developing markets both to and from Melbourne.' (Melbourne Airport, sub. 7, pp. 9 and 12)

'… airport operators do price to attract new entrants and small operators, as evidenced by the discounts offered in Sydney Airport's … Conditions of Use.' (SACL, sub. 27, p. 55)

Long-term growth strategies

To a considerable extent, airports' market power relies on the relatively small effect of an increase in airport charges on air travel costs. But this also provides airports with some incentive to cooperate with other input providers (eg in the tourism and aviation industries). In other words, airports, by themselves, will have little influence over the attraction of their location, but they may be able to increase demand and/or reduce demand uncertainty by working with other providers who are in a better position to influence demand.

State Government departments commented on the close working relationships that have developed with airports since they were privatised. That privatised airports have sought and maintained such relationships does not sit well with the notion of them exploiting whatever market power they may have.

Airline countervailing power?

Any attempts by airports to exercise their market power might be prevented by countervailing action by airlines. Airlines and airports hold strongly opposing views on whether airlines have countervailing power (box 5). Available evidence suggests that scope for competition in the aviation market and the importance of major airports to airline networks will limit (though not necessarily rule out) airline countervailing power in their dealings with the major capital city airports. Airline market power is likely to be far stronger in their dealings with smaller airports, which have less commercial clout and a greater reliance on holiday markets.

Box 5 **Opposing views on airline countervailing power**

'Adelaide Airport Limited [AAL] is not able to abuse any market power that it may have in the domestic market as AAL's main customers, Qantas and Ansett, hold significant countervailing market power. Put simply, Qantas and Ansett are much more important for Adelaide Airport than Adelaide Airport is for Qantas and Ansett.' (AAL, sub. 20, p. 1)

'Countervailing power can only arise if the buyer has choices available to it … However, if a buyer has no choices other than to purchase goods or services from a particular seller, no countervailing power will arise, no matter how large the buyer is relative to the market. Airlines have no choice but to use the services of airport operators to which customers want to fly.' (Qantas, sub. 48, p. 12)

The reduction in demand for airport services since September 2001 is likely to have enhanced airline countervailing power, at least in the short term. In the current market environment, threats by international airlines to withdraw services, or threats by domestic carriers not to increase services to an airport, would carry more weight than previously.

Likely effects of airport market power

Pricing efficiency

Regardless of market power considerations, it is likely, if aeronautical prices at the three airports still subject to price caps were unregulated, that *average* aeronautical charges would tend to rise above current levels. This is because, under the transitional price-cap arrangements, prices have continued to reflect the single-till prices established by the FAC. The UK airports regulator, the Civil Aviation Authority, recently observed for the UK regulated airports that 'the incremental costs of additional capacity are generally significantly above single till levels'.

How far beyond their efficient levels or, indeed, whether aeronautical prices at airports with market power would increase in the absence of *any* airport-specific price regulation, no-one can say with certainty. However, for reasons outlined above, the Commission considers that any price increases would be constrained by a range of market forces, including commercial interests of the airports themselves.

Moreover, to the extent that airports can discriminate in pricing, such that charges are allocated across airlines, aircraft and (through fare structures) across passengers in a way that roughly reflects different passengers' willingness to pay, the net effect on consumption of air travel of a given increase in airport charges will be reduced. Airports, like any business, have a strong incentive to discriminate among users in their pricing to increase their profits. Though such price discrimination will not be 'perfect', there are numerous examples of airport price structures designed to promote or retain marginal users of the airport, including direct incentives designed to encourage additional flights and new entrant airlines.

Distributional effects

If airports increased their prices, then broadly speaking the losers would be passengers (who may pay higher fares) and airline shareholders (who may have to accept lower returns). While the Commission is not in a position to make a judgement about preferred income distributions, it makes the following observations:

- there does not appear to be any great difference between the income profiles of passengers and airline shareholders on the one hand and the shareholders of airports (including large Australian superannuation funds) on the other;
- owners of airports and airlines comprise both Australian residents and non-residents (foreign interests can own up to 49 per cent of privatised airports); and

- many passengers are not Australian. In 1999, almost 60 per cent of passengers on international flights were non-residents. This represents about 15 per cent of all passenger movements at the major international airports. Non-residents also fly domestic and regional routes but the data on the proportions are not available.

Other consequences of market power

Several airline participants considered that airports with market power also would allow their costs to rise to inefficient levels (at the expense of potentially higher airport profits). The Commission has not been persuaded by this argument. The ability of owners to monitor managers in this respect is unlikely to be significantly less for privatised airports than for firms operating in other markets.

Airlines also have suggested that an airport with market power would allow quality to deteriorate to increase profits. This is a possibility, particularly if prices are constrained by regulation. However, an airport is unlikely to allow quality to deteriorate if higher prices can be charged for higher quality and if passenger spending on non-aeronautical services is sensitive to quality levels. Both of these conditions seem to apply.

Airports with market power may also have an incentive to under-invest in order to limit supply and maximise monopoly profits over time. New investment will occur only when the expected additional profits from that investment exceed any profits forgone from lower prices at the existing facility. But to the extent an airport can discriminate in pricing, its incentives to under-invest would be reduced.

Moreover, if an airport allowed capacity constraints to develop and to remain for lengthy periods (eg by not building an additional taxiway or runway), then the door may be opened to potential competitors. (There is evidence that international flights to and from Melbourne and Brisbane airports have increased due to the curfew and movement limits imposed by regulation at Sydney Airport.) Under-investment in capacity and quality enhancement could also reduce non-aeronautical revenues.

Market power could be used to deny access to the airport, either by way of higher prices or by imposing unacceptable access conditions. An airport is unlikely to have an incentive to deny access to its major customers, the airlines. (On the whole, the response of airports to new airline entrants seems to confirm this point.) But, it may have an incentive to deny or frustrate access to potential competitors, such as off-airport car-parking operators or providers of other forms of transport to the airport.

Box 6 **Contrasting views on airport behaviour without price control**

The airlines

'In BARA's view, failing to effectively regulate airport charges will weaken the incentives for airport operators to provide airport services efficiently … In the absence of competition there is scope for productive inefficiencies. Effective regulation, through acting as a surrogate for some of the cost pressures on a firm facing effective competition, can reduce these costs.' (Board of Airline Representatives of Australia, sub. 41, pp. 29–30)

'Left unregulated, airport operators can be expected to use their market power through monopoly pricing, diminishing service quality and the imposition of unreasonable terms and conditions of access to the airport.' (Qantas, sub. 48, p. 29)

The airports

'Airports in an unregulated environment will have strong incentives to consult with their customers on investments and quality outcomes to avoid wasteful investment … while facilitating an optimal level of demand.' (SACL, sub. 27, p. 34)

'It is Melbourne Airport's view that the commercial incentives for airports in Australia are such that … they will pursue pricing and investment policies that are likely to maximise economic welfare in the long run. In contrast, regulatory intervention through price controls is likely to reduce welfare in the long run.' (Melbourne Airport, sub. 7, p. i)

Feasible regulatory options

The case for any form of regulation rests on the net benefits it generates compared with other forms of regulation and, indeed, no regulation. There are numerous regulatory options for airports, several of which already apply in Australia and overseas. These range from heavy-handed cost-based regulation, to incentive regulation (price caps) and to more light-handed approaches such as price monitoring.

Cost-based and incentive regulation

Cost-based regulation aims to ensure that a regulated firm earns no more than its production costs, including a 'normal' rate of return on capital. It covers rate-of-return regulation and cost-justified price increases (as currently apply under the prices-notification regime for Sydney Airport). Regulated price increases based on costs typically provide insufficient incentives for firms to operate efficiently — the incentive to reduce costs is weakened because increased profits cannot be retained. Cost-based regulation also requires detailed assessment by the regulator of the firm's capital and operating costs, asset base, and expected sales.

Incentive regulation is designed to reduce some of the problems of cost-based regulation. It has usually taken the form of a CPI-X price cap. Over the period of the price cap, regulated firms have an incentive to reduce costs (particularly beyond the cost savings implied by the cap) to increase profits. But if prices are not to persist at levels that deliver excessive profits or losses, eventually price caps must be adjusted to allow prices to converge to levels that (just) cover costs. While the use of benchmarks can reduce the need to consider costs incurred by the regulated firm, it is unlikely that benchmarking can remove the need for cost assessment altogether. In other words, the incentive advantages of the price caps tend to be eroded over time, as the caps converge to cost-based regulation. For this reason, price caps are regarded generally as providing a *transitional* form of price regulation.

A range of issues has arisen in relation to price-cap arrangements applying to Australian airports. The inherited FAC starting prices (set to provide a modest return on capital, based on income from all sources) were not adequate to provide for efficient replacement aeronautical investment on a dual-till basis. These prices then combined with X values that incorporated expected productivity and passenger growth and some undefined investments, and (initially ill-defined) investment cost pass-through provisions.

At best, a lack of clarity has promoted strategic behaviour by all parties, increased compliance costs and discouraged commercial negotiation. At worst, the arrangements, which combine elements of incentive and cost-based regulation, have discouraged efficient investment by sending poor price signals both to airport operators and users about the costs of providing aeronautical services and by requiring very detailed regulatory assessment of every investment proposal.

Some of these problems could have been avoided by a more transparent process and clearer guidelines from the outset; others reflect the design of the price caps. Though price caps could be redesigned to incorporate planned investment, and benchmarks could be used to provide independent estimates of achievable productivity growth, inevitably there will have to be an eventual assessment by the regulator of an airport's operating and capital costs, land values, risk, and demand growth. Given the substantial conceptual and information problems in asset valuation and cost assessment (assessing the opportunity cost of airport land being especially problematic), the risks of regulatory error and the potentially damaging consequences of this for investment correspondingly increase.

Accordingly, the Commission considers that price caps, while preferable to explicit rate-of-return regulation, should be reserved for situations where there is a strong likelihood of excessive pricing and where such pricing is likely to impose major costs on the community.

Single or dual till?

Leases for privatised core-regulated airports were sold with an explicit undertaking that a single till would not be mandated. It appears that Sydney Airport will be sold on the same basis. Nonetheless, various airline participants have argued that price regulation should ensure that some or all non-aeronautical profits are applied to reduce aeronautical charges.

Though airports are likely to offer incentives to encourage aeronautical traffic in order to increase profits from related commercial activities, mandating the transfer of non-aeronautical rents is likely to discourage development by the airport of both aeronautical and non-aeronautical services, generating large efficiency losses in the long run. Indeed, reversion to a regulated single till, even on a partial basis, could stifle the risk-taking, innovation and development of the airport site that are regarded as major benefits of privatisation (as well as raising issues of sovereign risk).

Price monitoring

Price monitoring is a light-handed alternative to price caps or rate-of-return regulation. Under price monitoring, firms generally are required to provide information on prices, costs and profits, but there is no direct regulatory control over prices charged or revenues or profits earned. The impact of monitoring on firms' pricing decisions is more indirect, through moral suasion, providing customers with better information, publicity, and the threat of stricter forms of price regulation being re-introduced. Monitoring can be a less explicit or intrusive method for regulating prices than price caps or cost-based regulation. It can achieve the same objectives as stricter forms of regulation but at lower cost and with less distortion of incentives. Perhaps most importantly, as compared with more intrusive regulation, price monitoring can facilitate commercial negotiations between airport operators and users (provided there is no automatic recourse to regulatory determination of prices).

On the other hand, the potential to exercise market power may be greater under a price-monitoring regime than under price caps or cost-based regulation. However, such potential can be constrained by a credible threat that the Government would in time re-introduce stronger regulation at airports where market power clearly was being abused.

Access provisions and general competition law

Airport operators currently are subject to s. 192 of the *Airports Act 1996* and Part IIIA (the National Access Regime) of the TP Act, while anti-competitive practices are subject to Part IV of that Act. The five-year, automatic declarations of privatised core-regulated airports cannot be renewed under s. 192 as it stands. However, new airport-specific access arrangements or Part IIIA would continue to complement any future price regulation of airport services or, indeed, could provide an alternative to an industry-specific price-regulation regime. Prices of airport services could be regulated indirectly through regulation of the terms and conditions of access to a declared airport service.

As already noted, airports do not have strong incentives to deny access to their major customers, the airlines. They may have some incentives to frustrate access to those with whom they directly compete (eg car-parking operators) or where they can control competition in a market through their control of access to the airport facility in question (eg ground-handling operations). However, there is little evidence that airports have sought to do this. The Commission has not been persuaded that there is a case for the continuation of *special* access provisions that impose more easily satisfied declaration criteria for airports than other industries.

Commercial agreements

Several participants suggested various 'midway' approaches where airports and airlines would enter commercial agreements on prices, quality and conditions of access, within a broad regulatory framework.

The notion of promoting commercial agreements has immediate appeal because they could circumvent the need for a high level of regulatory involvement. However, the Commission considers that any such agreements, to be successful, necessarily must be negotiated voluntarily (by both sides), without automatic recourse to the regulator and without prescriptive requirements. Guidelines for such agreements (including consultation and model dispute-resolution mechanisms) may promote such arrangements, as would an indication that the agreements would be taken into account in future regulatory reviews of the industry.

That such guidance from government may be helpful for commercial entities in a commercial environment may seem surprising. The reason for it is the historical legacy of decades of government ownership of this industry and the pervasive effects of regulation.

The Commission's assessment

Major Australian airports — Sydney, Melbourne, Brisbane and Perth — have been assessed as having a high degree of market power in core aeronautical services. This suggests that some form of airport-specific price regulation is required for these airports, additional to general third-party access and competition regulation.

The Commission is not convinced that Adelaide, Canberra and Darwin airports have substantial market power and they may be comparable in this respect to Cairns Airport (the sixth-largest in Australia, albeit State owned), which is not subject to any special price regulation. However, some form of monitoring may be appropriate for these smaller airports at least as a transitional measure.

Remaining core-regulated airports, because they appear to have much less market power, or because, given their size, the costs of regulation would far outweigh any potential benefits, should not be subject to any airport-specific economic regulation, including price or quality monitoring. (They would continue to be subject to the TP Act and relevant provisions of the Airports Act.)

For those airports warranting continued regulation, the Commission considers that the choice essentially comes down to forms of regulation that can provide incentives for efficient outcomes. Of the stricter forms of price regulation, CPI-X price caps provide the best incentives but they also bring inevitable risks of regulatory error. Given that airports face significant commercial constraints and incentives that will moderate abuse of any market power, the Commission sees significant advantages in a more light-handed approach involving price monitoring. Each of the options is outlined and their relative merits then assessed in more detail.

Option A: dual-till price caps

The stricter option essentially would continue the regulatory regime introduced on 5 October 2001, but with some refinements in the setting of price caps (designed to promote efficient investment at airports and reduce regulatory intervention in investment decisions) and also some changes to price-monitoring arrangements.

For Melbourne, Brisbane and Perth airports, there would be a CPI-X price cap for five years, complemented by price and quality monitoring.

- The cap would apply only to the aeronautical services in which those three airports have been assessed as having a high degree of market power: aircraft movement facilities (including refuelling services), vehicle access facilities and most passenger movement facilities. In broad terms, this coverage is very similar to current price caps, except for refuelling services.

- Average prices allowed under the cap should broadly reflect the anticipated cost of efficiently providing regulated aeronautical services on a dual-till basis (box 7). In other words, unlike current price caps where inherited single-till prices are adjusted incrementally as new investment is put in place, the cap should correspond to anticipated efficient dual-till prices.

Box 7 **Setting of price caps under Option A**

Any price caps should be developed on a current-cost basis. They should incorporate the cost of required (optimised) aeronautical assets (including anticipated efficient capital expenditure) and anticipated efficient operating costs (with reference to productivity benchmarks where feasible) over the five-year regulatory period. In addition, they should be calculated on a dual-till basis. That is, assets used and profits earned in non-aeronautical activities should not be taken into account in determining allowable aeronautical prices.

Implementation of this current cost, dual-till approach would require both an assessment and revaluation of the aeronautical asset base. While historical costs may make for a simpler assessment, they are less likely to encourage efficient production and investment in this industry, especially where the current opportunity cost of significant assets is substantially above their historic cost (eg aeronautical land at Sydney Airport).

Capped prices at these airports would then be calculated on a broadly similar basis to current aeronautical prices at Sydney Airport (but with land appropriately valued). Moreover, whereas at Sydney, prices were increased by around 100 per cent (from previous FAC prices) in one step, any significant price changes could be phased in over the regulatory period via the X factors (appropriately adjusted for anticipated productivity and demand growth), to give airports and airport users time to adjust to the new basis for price setting.

With price caps calculated in this way, prices would not require adjustment for aeronautical investment foreseen and agreed to at the commencement of the regulatory period. However, there still may need to be provision for appropriate cost pass-through of large, unanticipated investments (and possible downward adjustment if planned investments do not proceed).

Price caps should continue to be calculated on a tariff-basket basis and hence allow price restructuring within the cap.

The Commission does not consider that setting price caps on a dual-till basis necessarily would deliver windfall gains (or losses) to airport operators. The outcome would depend on the expectations about future prices and regulation that were factored into their bids for the purchase of the leases.

- Price caps should continue to be complemented by monitoring of the quality of regulated services. While quality monitoring should identify any failure to invest appropriately on the part of airports (because relevant quality indicators would

deteriorate), with most investment incorporated in allowable prices, there may also need to be monitoring to ensure that investments are not being delayed intentionally by the airport to increase profits. Airlines would be expected to play a role in developing the forward investment program and their input should be sought in monitoring its implementation.

- Price monitoring would continue for some services currently designated as 'aeronautical-related' in which market power has been assessed as moderate (eg check-in counters, staff car parking). Some other services currently designated aeronautical related (eg public car parks), would not be subject to monitoring. Reporting of aggregate financial data for both aeronautical and non-aeronautical services would continue.

For Sydney Airport, for reasons discussed in box 8, in the absence of slot sale or trading mechanisms, regulation preferably should allow aeronautical prices to reflect more closely the opportunity costs incurred by airlines and their passengers in using the facility (that is, the value of slots to those who miss out at peak times), rather than simply reflecting the calculated costs of production. At the very least, provided capacity remains constrained, aeronautical prices should not be required to decline in real terms and should be adequate to encourage efficient, feasible expansion of aeronautical capacity at that facility.

- This could be implemented either by requiring notification of aeronautical price increases above the CPI, or by imposing a CPI-X cap with the X set at zero.
- In either case, price increases should be allowed to reflect peak-period demand (as provided for in the current regulatory framework for Phase 1 airports), and to accommodate necessary investment.

For Adelaide, Canberra and Darwin airports, there would be a continuation of (modified) price-monitoring arrangements (as outlined below in Option B) rather than price caps. Quality monitoring would continue at these airports.

For all other airports, there would be no airport-specific price regulation or quality monitoring. This would require amendment of the Airports Act so that Alice Springs, Coolangatta, Hobart, Launceston and Townsville airports no longer were designated as 'core-regulated' airports.

All airports should be subject to the generic provisions of the Part IIIA National Access Regime. An airport-specific access regime should be considered only if procedural improvements already identified by the Commission, such as scope for multilateral arbitrations, are not made to the National Access Regime.

Box 8 **The benefits of price rationing at Sydney Airport**

Prior to September 2001, Sydney Airport experienced excess demand for aircraft movement slots for several hours a day. This situation is likely to resume in the not-too-distant future. The limited supply of slots is currently due to a movement cap and curfew, and the regional 'ring fence'. It is likely that the market-clearing price at peak times exceeds airport production costs.

Appropriate peak/off-peak charges at Sydney Airport would promote more efficient use of the airport and, given the massive investment required to establish a second airport, also would provide important signals to the Government about the need for a new facility and the costs of the various constraints imposed on the use of Sydney Airport.

Though prices approaching market-clearing levels at peak times would be likely to promote use of the airport by those who value it most — even if ring-fenced regional flights were quarantined from such price increases, in line with announced Government policy — the airport could earn large profits, reflecting the scarcity value of slots. (Efficient peak/off-peak charging would balance lower off-peak charges against higher peak charges — this would tend to moderate the extent of profit increases.)

It is important to note that any rise in peak prices is unlikely to lead to higher passenger fares. There is strong evidence that the scarcity value of the slots is factored into fares already; it is very difficult to obtain discounted fares to Sydney at peak times. In other words, it is the airlines that are currently benefiting from the excess demand for landing slots at peak times.

If bidders were informed prior to the sale of Sydney Airport that efficient peak/off-peak charges would be permitted, then any anticipated scarcity rents would accrue to the Commonwealth Government (and taxpayers generally) in the bid price, rather than to the new airport operator.

Source: appendix H.

Option B: price monitoring

This option would extend price monitoring to Phase 1 airports and Sydney Airport for a *probationary* period, and maintain (modified) price monitoring of Adelaide, Canberra and Darwin airports. As in Option A, there would be no airport-specific price regulation of any other airports.

For Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports, there would be mandatory price monitoring by the ACCC. The monitoring regime would continue for five years.

- During this probationary period, the regulator would not have the power to alter unilaterally the monitoring regime or impose stricter price regulation.

- Information requirements would be specified at the commencement of the period and could not be amended without agreement of the parties. The Commission envisages somewhat more detailed monitoring of Sydney, Melbourne, Brisbane and Perth airports, including the weighted average cost of capital (WACC) for aeronautical assets. Otherwise, proposed information requirements for the seven airports broadly would be consistent with existing disclosure and reporting requirements.
- As under current monitoring and reporting arrangements, information would be formally audited. There also should be provision to treat some data as commercial-in-confidence where disclosure could undermine commercially-negotiated agreements. An annual report presenting monitored information would be made publicly available, with commentary (but not a pre-emptive assessment of the monitoring regime) by the ACCC (and auditors) where considered warranted.
- Quality-of-service monitoring would continue at all price-regulated airports.
- Voluntary commercial agreements between airports and users (including non-airline users) would be encouraged by providing guidelines regarding coverage, consultation and dispute-settlement mechanisms. (The Commission sees no need to exempt from access regulation airports that enter into such agreements.)
- An independent public review would be conducted towards the end of the five-year monitoring period to ascertain whether there should be any future price regulation of those airports. Other airports could be included in the review only where there is *prima facie* evidence of persistent misuse of market power.
- Factors to be taken into account by the review in assessing whether airports had abused market power should be specified at the start of the regulatory period (box 9). Efficient pricing principles for airports are discussed in this report and also have been developed more generally by the Commission in its reviews of the National Access Regime and Telecommunications Competition Regulation. They are predicated on the need to avoid excessive prices, without the regulator attempting to set prices too precisely, with the resultant risk that prices may be pushed too low and efficient investment discouraged.

For all other airports, there would be no airport-specific price regulation or quality-of-service monitoring. This would require amendment of the Airports Act so that Hobart, Launceston, Alice Springs, Coolangatta and Townsville Airports no longer were designated as 'core-regulated' airports.

All airports should be subject to the generic provisions of the Part IIIA National Access Regime. An airport-specific access regime should be considered only if

procedural improvements already identified by the Commission, such as scope for multilateral arbitrations, were not made to the National Access Regime.

Box 9 **Proposed review criteria**

The proposed review of price regulation of airports to ascertain the need for continued regulation (if any) in five years time, should be guided by the following criteria.

Pricing principles

- At airports without significant capacity constraints, efficient prices broadly should generate expected revenue that is not significantly above the long-run costs of efficiently providing aeronautical services (on a dual-till basis). Prices should allow a return on (appropriately defined and valued) assets (including land) commensurate with the regulatory and commercial risks involved.
- At airports with significant capacity constraints, efficient peak/off-peak prices may generate revenues that exceed the average production costs incurred by the airport.
- Price discrimination and multi-part pricing that promote efficient use of the airport should be encouraged. This may mean that some users pay a price above the long-run average costs of providing aeronautical services, whereas more price-sensitive users pay a price close to marginal cost.

Other criteria

- Whether quality-of-service outcomes have deteriorated and/or failed to meet the requirements of users.
- The extent to which commercial agreements on prices and quality of service have been negotiated.
- The degree of consultation with airport users and the extent of the exchange of information.
- The number and outcome of applications for third-party access and the extent and validity of user complaints.

Weighing the options

Option A is superior to the existing regime

Option A would continue to apply price-cap regulation to those airports considered to have a high degree of market power. In addition, Option A would set price caps that broadly reflect costs of supplying aeronautical services on a stand-alone, rather than single-till, basis. For these reasons, Option A would, in the Commission's

view, perform better than the regulatory arrangements in place before 5 October 2001 and those that have applied since then. In particular:

- by making allowance for anticipated investment in the price-cap parameters, it is likely that regulatory involvement in and, therefore, scope for distortion of, investment decisions will be reduced. In addition, airports and their users would receive much better signals from efficient dual-till prices regarding the real costs and benefits of supplying aeronautical services;
- airports and their customers would have greater incentives to negotiate price and quality agreements within the overall limits of the designated caps (at least where there is unused airport capacity), reflecting incentives to increase aeronautical and non-aeronautical profits by expanding use of the airport at the margin;
- use of benchmarking, where feasible, could help to sustain the positive incentive effects of price caps and avoid them converging to rate-of-return regulation; and
- maximum average aeronautical prices at Melbourne, Brisbane and Perth airports would be set on a dual-till basis, consistent with prices approved by the ACCC for Sydney Airport.

But price caps are not warranted

The Commission has not been persuaded, however, that there is a strong case for the continuation of price caps at *any* privatised core-regulated airports. This is for two principal reasons.

The first is the ever-present risk of regulatory failure, given the severe information problems confronting any regulator. Setting price caps inevitably entails detailed regulatory assessment of, and involvement in, airport operations and investment decisions. It should therefore be used only where the potential efficiency costs of abuse of market power are significant. Even then there is a risk that regulation will cause its own distortions to production and investment decisions. While the Commission agrees that some transitional problems with current price-cap arrangements may have been settled, and that the price caps proposed under Option A should reduce regulatory involvement in investment decisions, the risk of regulatory failure remains high. This risk has been amplified by the uncertainty that currently pervades global aviation markets.

The second and related reason is that the 'problem' to be addressed does not warrant such a heavy-handed regulatory regime. Though the four largest airports have considerable market power, the prospect of them using that power in a way that would generate significant costs to the economy or community is supported

neither by the evidence nor the analysis. There are strong commercial incentives pulling in the other direction, including scope for increased profits in non-aeronautical activities from increasing passenger volumes and incentives to discriminate and differentiate in pricing.

Option B provides more appropriate regulation

On balance, therefore, the Commission considers that while the market power of the four major airports warrants some form of regulatory oversight, the continuation of price caps is not the best approach. Option B offers a much better regulatory mechanism for promoting the principles for regulation identified in the terms of reference.

It would promote commercial relationships

In particular, Option B would encourage airports and airlines to negotiate commercial agreements. While any guidelines for such agreements should not be overly prescriptive — the parties would be far more skilled in working through the detail of agreements than regulators — the Commission sees a role for formal guidance to assist all parties.

While some participants have questioned whether commercial negotiations are feasible in this industry, the Commission notes that airlines deal directly with numerous unregulated small airports, both privately- and publicly-owned, and some unregulated larger ones (eg Cairns). This is not to say that relations would always be smooth, just that there seems to be considerable scope for reasonable commercial interaction between airports and users, provided there is some ultimate constraint on abuse of any market power (which Option B provides, in addition to the TP Act).

In this regard, the proposed length of the monitoring period is crucial. If it were too short, some parties might be encouraged not to deal in good faith, in order to increase the likelihood of re-regulation. If the period were too long, airports with market power might have an incentive to make use of that power. The Commission's view is that five years would achieve the right balance.

It would also constrain inefficient outcomes

To give airports guidance as to what behaviour could provide grounds for re-introduction of stricter price controls (or removal of airport-specific prices oversight), the Commission has elaborated some broad principles for a review body to apply in five years' time in assessing how the industry and regulatory framework

were performing (box 9). Some participants expressed concern about the need for additional public scrutiny of any such principles. However, the broad pricing principles proposed have already been discussed extensively during this inquiry and parallel inquiries into infrastructure regulation (the National Access Regime, the *Prices Surveillance Act 1983* and Telecommunications Competition Regulation).

The Commission also draws attention to the continued relevance of third-party access provisions (Part IIIA) and Part IV of the TP Act to airports. The Commission does not consider that airports have strong incentives to deny or frustrate access in order to impede competition in a way that would be likely to lead to declaration of aeronautical facilities (at least under the modified declaration criteria recommended in the *Review of the National Access Regime* (PC 2001a)). Nonetheless, the potential activation of this mechanism does provide users with regulation of last resort, providing additional encouragement for airports to enter into reasonable agreements regarding prices and conditions of airport use.

Concluding remarks

In the Commission's view, the regulatory approach of Option B provides the best balance of incentives and disciplines for major airports.

This recommendation for lighter regulation inevitably rests on a judgement about the likely behaviour of major airports. A number of participants saw this recognition of the limitations of knowledge about future behaviour as weakening the Commission's conclusions in its draft report. Yet those arguing in favour of price caps have based their arguments on their own judgements about the likely behaviour of airports. The Commission has independently considered the evidence and arguments in making its assessment.

Some participants also have argued against discontinuation of price caps at a time of upheaval and uncertainty in the aviation industry. The Commission is firmly of the view that the uncertain outlook calls for more, not less, flexibility. Indeed, this has been recognised by the Government in discontinuing price caps for Phase 2 airports. If airport operators themselves cannot predict what will happen over the next few months or years, regulators are unlikely to be able to fix price caps that can deal efficiently with future market conditions.

Some have cited their interpretation of the recent New Zealand experience with light-handed regulation in an attempt to rebut the Commission's price-monitoring option. But closer examination suggests that the New Zealand system, notwithstanding some deficiencies, has not been a failure (box 10). For example,

Auckland and Christchurch airports have agreed on new aeronautical prices with their major airline customers and those price outcomes do not appear excessive.

Box 10 **New Zealand's experience with light-handed regulation: success or failure?**

Since 1988, a light-handed system of price monitoring has applied to New Zealand's three largest airports — Auckland, Christchurch and Wellington. The system is currently being reviewed by the NZ Commerce Commission (CC).

The NZ approach has been criticised by some participants in this inquiry for, in their view, failing to restrain the abuse of market power by these airports — allegedly resulting in high prices, high returns and efficiency losses — and for encouraging extensive and expensive litigation between airlines and airports.

While there may have been shortcomings in the NZ system of price regulation, evidence of abuse of market power is weak.

- Airports and airlines have agreed on price increases at Auckland and Christchurch airports. Auckland's prices have increased by 12.5 per cent. This was the first increase in landing charges at Auckland Airport since privatisation in 1998, and its first net increase since 1992.
- Assumptions and modelling underpinning the CC's analysis of the need for price controls currently are the subject of intense debate. The CC's conclusions depend heavily on its decision to remove from the allowed asset base land purchased by the airport to build a new runway (an investment even airlines agree is necessary). If this land had not been excised from the asset base, Auckland Airport's estimated rate of return would have fallen *below* the benchmark allowed.
- Even on the CC's own reckonings, Auckland Airport's landing charges in 2000 were less than 3 per cent above what was estimated to be a competitive benchmark price. Wellington and Christchurch airports' charges were estimated to be *below* the estimated competitive benchmarks. The difficulty of valuing land makes 3 per cent an insignificant deviation from zero.

The high incidence of litigation between airports and airlines appears to have been driven by uncertainty regarding the interpretation of an airport's legislative requirement to 'consult'.

The CC has delayed the release of its final recommendations by six months to consider further the substantive issues raised in response to its draft report.

While light-handed regulation currently is not the dominant model worldwide, there are signs that the direction is changing. For example, in the United Kingdom, the Civil Aviation Authority recently has proposed modifications to regulatory arrangements that are in part designed to foster commercial negotiation between airports and airlines at major airports.

The Commission recognises that its preferred option would involve a considerable shift from current arrangements at the four major airports — though one largely envisaged by the architects of the regulatory arrangements put in place at the time of airport privatisations. The Commission also recognises that some parties may find such a transition difficult, particularly given the long history of government provision of airport services at those airports, and pricing structures that have effectively subsidised aeronautical charges. Nonetheless, even if price caps were to be maintained (in any form), aeronautical charges would still need to rise to encourage efficient long-run service provision.

The Commission considers that the full benefits of privatisation of airports are unlikely to be realised if commercial relationships between airports and airlines continue to be heavily conditioned by intrusive price regulation. The ongoing need for substantial investments at major airports requires a more commercial and cooperative approach. The potential for heavy-handed regulation unduly to constrain prices and commercial relationships poses a real risk and one that could impose large costs on consumers in the future.

The Commission emphasises that it is not advocating *de*regulation of major airports. It is proposing a probationary regulatory package designed to facilitate the transition to a more commercial environment, while providing credible constraints on the use of market power by these airports.

Whether or not the Commission's preferred option is adopted, it is essential that, prior to implementation of the chosen regulatory approach, parties are consulted on the practicalities of proposed regulation and made aware of the various requirements, in order to reduce uncertainty and the potential for disputation. In particular, bidders for Sydney Airport should have a clear picture of the regulatory framework for that facility, so that expected future airport charges can be factored adequately into the sale price.

Recommendations and findings

Recommendations

Recommendations 1–8 should be read in conjunction with chapter 12, which sets out the details of Options A and B.

RECOMMENDATION 1

For Sydney, Melbourne, Brisbane and Perth airports, price caps and prices notification arrangements should be replaced by mandatory price monitoring arrangements for a probationary five-year period, as outlined in Option B.

- ***Airport-specific price-monitoring arrangements could be incorporated either in the* Airports Act 1996 *(Airports Act) or the* Trade Practices Act 1974 *(TP Act), but should be consistent with any generic price-monitoring provisions that may be introduced into the TP Act following the Commission's separate review of the* Prices Surveillance Act 1983 *(PS Act).***

In the event that the Government opted for a stricter form of price regulation at these four airports, Option A should apply such that:

- ***annual price caps of the form CPI-X continue for five years at Melbourne, Brisbane and Perth airports. Price caps should be set to reflect the efficient costs of providing aeronautical services in the long run, on a dual-till basis. Price caps should be complemented by price monitoring of some 'aeronautical-related' services; and***
- ***for a capacity-constrained Sydney Airport, prices should not be required to fall in real terms. Regulation should comprise either prices notification or a price cap of the form CPI-X, with X set at zero. Price increases should be allowed to reflect peak-period demand and to accommodate necessary investment.***

RECOMMENDATION 2

For Adelaide, Canberra and Darwin airports, mandatory price monitoring of aeronautical services and some 'aeronautical-related' services (as outlined under Option B) should continue for five years. (Airport-specific price-monitoring arrangements could be incorporated either in the Airports Act or the TP Act, but should be consistent with any generic price-monitoring provisions that may be introduced into the TP Act following the Commission's separate review of the PS Act.)

RECOMMENDATION 3

Quality monitoring of regulated services (as outlined under Option B) should continue at all airports subject to price regulation; that is, at Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports.

RECOMMENDATION 4

Neither price monitoring nor price caps should be reintroduced for Alice Springs, Coolangatta, Hobart, Launceston and Townsville airports. The Airports Act should be amended so that these airports are no longer designated as 'core-regulated' airports.

RECOMMENDATION 5

Commercial agreements should be encouraged and assisted (for example, by providing guidelines regarding coverage) under price-monitoring arrangements, or price caps, if they were retained at some airports.

RECOMMENDATION 6

Price regulation of airports should be reviewed towards the end of the five-year regulatory period. The review should be independent and public. Its objective should be to ascertain the need for any future price regulation of airports (including price monitoring or more stringent price regulation). In making its assessment, the review should be guided by principles of efficient pricing plus several other criteria set out under Option B. Agreed review criteria should be spelt out at the beginning of the regulatory period.

Other airports should be included in the review only where there was prima facie evidence of persistent misuse of market power (namely, evidence of inefficient prices, poor quality etc).

RECOMMENDATION 7

All airports should be subject to the generic provisions of the National Access Regime in Part IIIA of the TP Act. An airport-specific access regime should be considered only if procedural improvements, such as scope for multilateral arbitrations, are not made to the National Access Regime.

RECOMMENDATION 8

Prior to implementation of the chosen regulatory approach, airports and airlines should be consulted on the practicalities of the proposed regulation and made aware of its various requirements, in order to reduce uncertainty and the potential for disputation. In particular, bidders for Sydney Airport should have a clear picture of the regulatory framework for that facility so that expected future airport charges can be factored adequately into the sale price.

Findings

This section draws together all findings contained in this report. Findings are listed under the relevant chapter.

Chapter 5 Market power of airports

FINDING 5.1

There are significant barriers to entry in the provision of airports. These arise from natural monopoly characteristics that are reinforced by regulatory constraints.

FINDING 5.2

The price elasticity of demand for the services of a particular airport is influenced by a number of factors. Although the typically low proportion of airport charges in airfares and airline costs suggests low price sensitivity, this will be mitigated by any potential for destination, modal and airport substitution, and the supply responses of other input providers to changes in airport charges.

Airports that face more significant substitution possibilities will face more price-sensitive demand (and hence have lower market power).

FINDING 5.3

Of the core-regulated airports, Sydney, Melbourne, Brisbane and Perth have most market power. Adelaide Airport is likely to have a moderate degree of market power. Canberra and Darwin airports also are likely to have a moderate degree of market power, though they appear to face stronger substitution possibilities than Adelaide Airport.

Core-regulated airports that do not appear to have significant market power (due mainly — except for Townsville — to the scope for effective inter-airport competition) are Alice Springs, Coolangatta, Hobart, Launceston and Townsville.

Chapter 6 Market power in particular airport services

FINDING 6.1

For those airports with a moderate to high degree of market power, the extent of market power varies across the services provided. It appears to be most significant in aircraft movement facilities, vehicle access, some forms of passenger processing facility and aircraft refuelling. With respect to aircraft refuelling, market power appears to be most significant at Brisbane, Perth and Sydney airports.

Where other providers potentially compete with the airport in the provision of services, access may be an issue if these providers require access to the airport site.

Chapter 7 Conduct of unregulated airports

FINDING 7.1

Profits from non-aeronautical activities at most core-regulated airports appear significant, especially when compared with current earnings from regulated aeronautical charges. Though this earnings disparity may be expected to be somewhat less if price regulation of aeronautical services were removed, there is an incentive for airports to temper prices for aeronautical services (particularly for additional services and new entrants), improve quality and/or increase aeronautical capacity to encourage passenger growth and non-aeronautical revenue. The magnitude of non-aeronautical earnings suggests that the effects on aeronautical prices would be significant.

FINDING 7.2

The countervailing power of airlines in their dealings with major capital city airports appears limited. However, airlines may have a degree of countervailing power even at those airports where there is scope for airport substitution (for example, entry ports for international flights), where airlines form alliances and bargain as a group, or where selective threats can be made to reduce services that are highly profitable to airports.

For smaller core-regulated airports, airline countervailing power is likely to be stronger, due to the commercial strength of major airlines relative to smaller airports, the market segments served by those airports and greater scope for airport competition.

FINDING 7.3

Non-airline users of airports do not appear to have significant countervailing power, though representative bodies acting on behalf of these users may exert some influence.

FINDING 7.4

Airport operators have a strong incentive to discriminate in pricing in order to increase their profits. Evidence suggests that they have scope to do this by applying different pricing structures, including low entry prices and other incentives for marginal flights and new airlines. Coupled with the ability of airlines to discriminate in pricing among passengers, such pricing is likely to reduce any

efficiency losses arising either from the need to cover the fixed costs of providing aeronautical services or from the exercise of airport market power.

FINDING 7.5

At capacity-constrained facilities (where the shortage of capacity is not created or perpetuated by the airport), efficiency requires that capacity is rationed such that consumers with higher valuations of the service obtain access. Where capacity is restricted, airports not subject to price regulation would generally have an incentive to set aeronautical prices that promote efficient use of the airport.

FINDING 7.6

Aeronautical charges at some airports could be expected to rise if unconstrained by regulation, in part because current charges may be below the level required to cover the costs of investment. Whether and to what extent prices rise above levels required for efficient *provision of aeronautical services, as the result of the exercise of market power, cannot be forecast with certainty. However, there is reasonably strong evidence that a range of market influences will moderate any increase in prices and any negative efficiency effects of higher prices. Chief among these are the effects of non-aeronautical earnings and the scope for discrimination in pricing so that airport users are not discouraged from using airport facilities.*

Higher airport charges could redistribute income from airlines and their passengers to airports. The burden of such higher charges would be likely to fall on both Australian residents and non-residents.

FINDING 7.7

Managers of privatised airports with market power are unlikely to have much scope to allow inefficiencies in production.

FINDING 7.8

In principle, airports with market power may have some incentive to delay investment or to allow quality to deteriorate, in order to maximise their profits. However, in practice, to the extent that airports with market power can discriminate in pricing or differentiate products for different users, those incentives will be weakened. The scope to earn additional non-aeronautical profits from higher quality or expanded aeronautical capacity and passenger throughput, will also encourage the provision of appropriate quality and investment levels.

FINDING 7.9

An airport with market power has little incentive to deny or frustrate access to its major customers, the airlines.

An airport with market power may have an incentive to restrict 'front-door' access to off-airport providers of competing services such as car parking, or providers of competing transport modes, though there is little evidence of this occurring.

Chapter 8 Review of airport regulation: price-cap and prices-notification arrangements

FINDING 8.1

The single-till basis of the starting prices (also incorporating some cross subsidies between airports), and the real declines in aeronautical prices at most airports under the price cap suggest that, for many airports, aeronautical prices by the end of 2000-01 may have been below the level necessary to justify future aeronautical investment.

FINDING 8.2

The necessary new investment provisions have not promoted the commercially-negotiated outcomes that were envisaged by the architects of the regime. This has been partly due to the need to develop criteria and procedures for necessary new investment after purchase and for participants to adapt to the very different business environment following airport privatisation.

However, the observed difficulties also point to some fundamental problems. In particular:

- *the lack of transparency regarding what investment was considered to be included in the base aeronautical prices and what was to be covered by necessary new investment, with resultant effects on incentives to invest;*
- *the incentives for some participants to approach the regulator rather than achieve commercially-negotiated solutions;*
- *the high costs of complying with the regime; and*
- *the regulatory risk due to the uncertainty and delays introduced by the need to have every investment-related price increase vetted by the regulator.*

FINDING 8.3

If regulation of Sydney Airport aeronautical charges continues to involve prices set by the regulator on a production-cost basis, aeronautical land should be valued at its opportunity cost rather than at indexed historical cost.

FINDING 8.4

The aeronautical price increases implemented at Sydney Airport place its pricing on a fundamentally different and more appropriate (dual-till) basis than that at other core-regulated airports. The significant range of possible outcomes for a number of cost parameters (for example, land values, cost of capital etc) indicates the imprecision of regulatory price setting and the potential for inefficient prices being established by regulation.

If significant excess demand returns at Sydney Airport at peak times, production cost-related or rate-of-return based regulation would be likely to constrain the setting of efficient aeronautical charges for those times.

Chapter 9 Review of airport regulation: price monitoring, quality monitoring and access regulation

FINDING 9.1

The overall quality of service provision by airport operators at monitored airports does not appear to have deteriorated since monitoring commenced. This outcome reflects to a large extent the commercial incentives for airport operators not to reduce service quality.

Although there are some problems with the quality monitoring process, it provides transparency of reporting and facilitates some comparison between airport operators at relatively low cost.

FINDING 9.2

Though privatised core-regulated airports have facilitated access for new entrant airlines, airport-specific access provisions (s. 192 of the Airports Act) do not appear to have been instrumental in achieving this outcome.

Chapter 10 Regulatory options: cost-based and incentive regulation

FINDING 10.1

Incentive regulation has some advantages over cost-based regulation. However, given the tendency of price caps to converge towards cost-based regulation (with associated high levels of regulatory involvement and risks of regulatory error, and the consequences of these for investment and long-term provision of services), price-cap regulation should be implemented only when there is clear evidence that, without such regulation, economic efficiency would be seriously impaired.

Where price caps are implemented, the approach adopted for investment should be spelled out clearly and transparently to all relevant parties from the outset, in order to reduce the risk of inefficient outcomes and excessive gaming.

FINDING 10.2

The Commission considers that if price-cap regulation were to be continued for any airports, then the cap should apply only to those aeronautical services in which the airport has substantial market power. Profits earned in non-aeronautical activities should not be taken into account in setting the cap.

If an airport exercises significant market power (as opposed to earning locational rent) in any non-aeronautical activity, separate price monitoring or other regulation may be appropriate.

Chapter 11 Regulatory options: price monitoring, access provisions and general competition law

FINDING 11.1

Where airport market power is not substantial, or where there are commercial constraints on the misuse of market power, price monitoring has significant advantages over stricter forms of price regulation. Provided there is no easy recourse to regulatory intervention, a price-monitoring regime can promote efficient outcomes while reducing the risk of regulatory failure. Price monitoring also has the potential to reduce compliance costs and promote commercial negotiations.

FINDING 11.2

There do not appear to be any grounds for airport-specific access arrangements that set lower declaration thresholds than Part IIIA of the TP Act. An airport-specific regime that allowed for multilateral arbitrations might be warranted if such arbitrations were not provided for in the National Access Regime, as recommended separately by the Commission in its review of that regime.

FINDING 11.3

There are insufficient grounds for an airport-specific access undertaking regime.

FINDING 11.4

Facilitation and encouragement of agreements between airport operators and users has the potential to promote commercial relationships and efficient outcomes.

1 Introduction

This chapter sets out and clarifies the terms of reference, provides background to this inquiry, and outlines the Productivity Commission's approach to the inquiry.

1.1 Terms of reference

The Commonwealth Government has asked the Productivity Commission to report on whether there is a need for price regulation of airports, and the appropriate form of any price regulation. The terms of reference for the inquiry are reproduced at the beginning of this report.

The terms of reference state that the purpose of the inquiry is to:

> … examine whether new regulatory arrangements, targeted at those charges for airport services or products where the airport operator has been identified as having most potential to abuse market power, are needed to ensure that the exercise of any such power may be appropriately counteracted. (terms of reference, para. 6)

In so doing, the Commission is to take into account several principles, the first of which states:

> The CPI-X price cap applied to aeronautical charges during the first five year period of private ownership will no longer operate. (terms of reference, para. 7(a))

Shortly after commencement of the inquiry, the Commission wrote to the Assistant Treasurer, seeking clarification of paragraph 7(a) of the terms of reference. In its letter, the Commission stated:

> The Commission understands that Paragraph 7(a) essentially conveys the Government's intention that the current price cap arrangements for Phase I and II airports will cease after five years of operation. It is also our view that paragraph 7(a) is not intended to preclude from consideration price cap arrangements of the general form of CPI-X as an option for future prices regulation of airport services, should some form of prices regulation be regarded as appropriate.

The Commission sought confirmation from the Assistant Treasurer that this general approach to price regulation could be considered as one of the range of options where there is most potential for abuse of market power. The Commission's

understanding of paragraph 7(a) was confirmed by the Assistant Treasurer in correspondence with the Commission (appendix A).

Other principles that the Commission is to take into account include that price regulation:

- be applied to those aeronautical services and to those airports where airport operators have most potential to abuse market power;
- minimise compliance costs on airport operators and the Government;
- promote the efficient operation of airports; and
- facilitate benchmarking comparisons between airports, competition in the provision of services within airports, and commercially negotiated outcomes in airport operations.

1.2 Background to the current inquiry

In 1997, the Commonwealth Government commenced the sale to private operators of long-term leases (50 years with an option to renew for a further 49 years) for 17 of the 22 airports operated at the time by the Federal Airports Corporation (FAC) (figure 1.1).

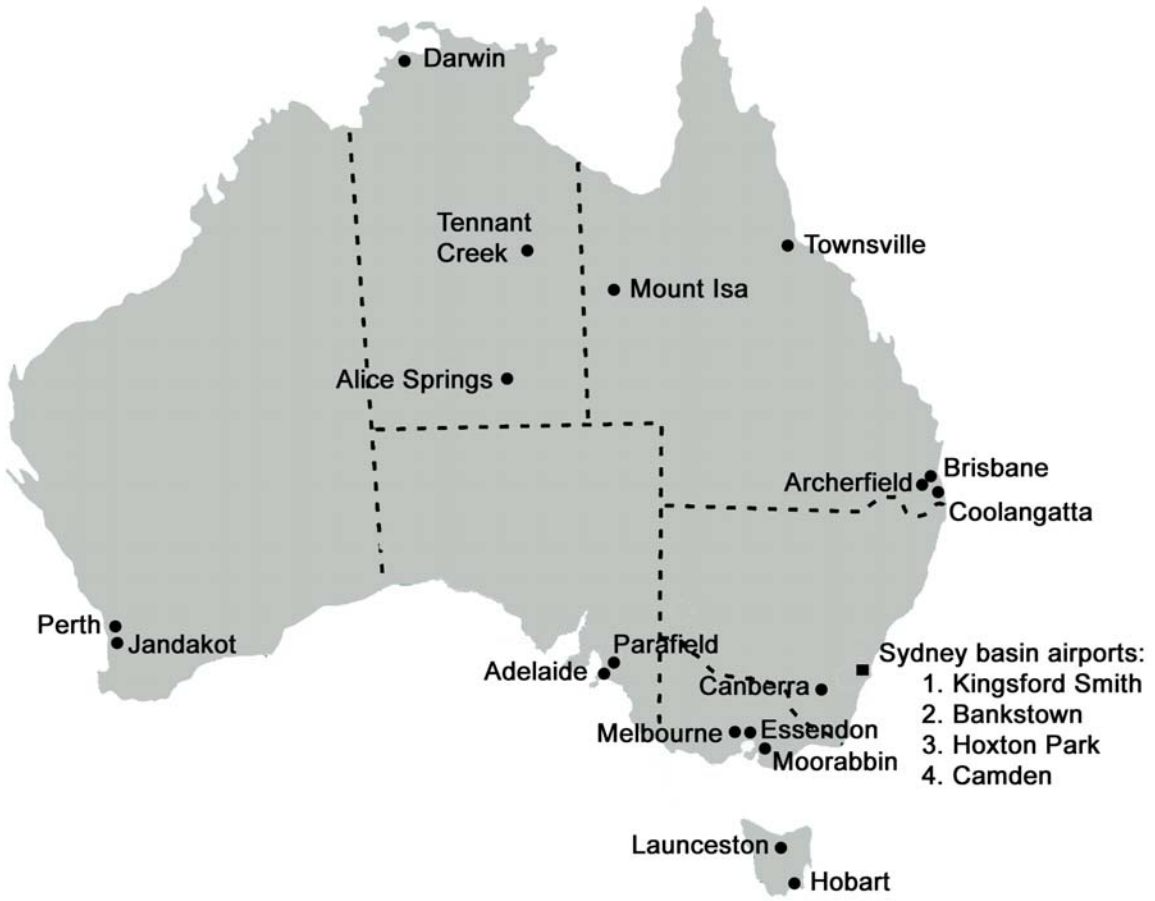
Leases were granted to private sector operators at Brisbane, Melbourne and Perth airports in 1997 (Phase 1), and for a further 14 airports (Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston, Townsville, Mount Isa, Tennant Creek, Archerfield, Jandakot, Moorabbin and Parafield airports) in 1998 (Phase 2). The remaining five federal airports — the four Sydney basin airports (Sydney (Kingsford Smith), Bankstown, Camden and Hoxton Park) and Essendon Airport — were leased but not privatised, with their ownership transferred to two wholly Government-owned companies in 1998. The FAC subsequently ceased operation.

The sale of Essendon Airport was completed in September 2001. The sale of Sydney Airport has been deferred from late 2001 to early 2002. The three other Sydney basin airports are to be sold in the second half of 2002.

At the time of the sale of leases, 12 of the 22 leased airports were designated as 'core-regulated' airports under the *Airports Act 1996* and were subject to price regulation under the *Prices Surveillance Act 1983* (PS Act). They comprised Sydney Airport and 11 privatised airports (all Phase 1 airports, and eight of the Phase 2 airports — Adelaide, Alice Springs, Canberra, Coolangatta, Darwin,

Hobart, Launceston and Townsville). These airports are characterised by significant interstate and, in some cases, international regular public transport services.

Figure 1.1 **Airports leased from the Commonwealth Government[a]**



a FAC airports at the end of 1996.

Price regulation of core-regulated airports included prices notification, price monitoring, price-cap arrangements and special provisions for necessary new investment at airports. These airports and the other leased airports were also subject to regulation under the Airports Act and the *Trade Practices Act 1974* (TP Act).

In 1996, the then Department of Transport and Regional Development (DoTRD 1996) described the prices oversight arrangements as transitional measures, designed to allow airport operators, users and the Government regulator time to adjust to the new operating environment for airports. It was envisaged that pricing arrangements would change after experience was gained in the new operating environment. As such, a review of the pricing arrangements was a key feature of the privatisation program developed by the Commonwealth Government.

> The review will be based on the premise that the price cap applied to aeronautical charges during the first five years will no longer operate. In its place, the review will

> aim to develop arrangements targeted at those charges where the airport operator has most potential to abuse market power. The existing set of aeronautical charges will be examined, on an airport-by-airport basis, with the review assessing whether services should be added or removed from surveillance. (DoTRD 1996, p. 7)

The review was to be completed before the end of the first five-year period of the leases.

The Commonwealth Government subsequently decided that the review would be undertaken by the Productivity Commission, rather than by the Australian Competition and Consumer Commission (ACCC) as foreshadowed in the Government's Pricing Policy Paper issued in 1996 (DoTRD 1996), because:

> There are strong synergies between this review and the Productivity Commission's current review of the *Prices Surveillance Act 1983*, which provides the framework within which airport prices are regulated. There are also synergies with its current reviews of telecommunications specific competition regulation and access arrangements under Part IIIA of the *Trade Practices Act 1974*. (Kemp 2000)

The Productivity Commission commenced its review in December 2000. In October 2001, the Commonwealth Government announced changes to prices oversight arrangements at airports to assist airports to cope with difficulties arising from domestic and international events. Changes included the removal of price caps on aeronautical charges at eight Phase 2 airports, and allowance of one-off price increases at Melbourne, Brisbane and Perth airports of up to 6.2, 6.7 and 7.2 per cent, respectively (chapter 3). The Government noted that the changes were consistent with the findings of the Commission's draft report, released in August 2001. The arrangements are to be reviewed in light of developments in airport prices and the Commission's final report (Hockey 2001).

1.3 The Commission's approach

The Commission's approach takes into account the terms of reference for this inquiry and the general policy guidelines in the *Productivity Commission Act 1998*. Although this inquiry is not a legislative review under the requirements of the Competition Principles Agreement (CPA), the principles embodied in this agreement apply. The terms of reference for this inquiry broadly reflect the CPA.[1]

In considering the issues and formulating its draft recommendations, the Commission has also taken into account previous Productivity Commission reports

[1] In 1995, the CPA was signed by the Commonwealth, States and Territories as part of the National Competition Policy reform package. The CPA, in essence, sets out the principles to be followed by governments in relation to the agreed competition policy reforms.

and current inquiries, particularly those noted above by the then Assistant Treasurer, Senator Kemp.

The Commission's approach, in broad terms, has been to:

- identify the objectives of price regulation;
- assess whether there is a need for price regulation of airport services by:
  - identifying which (if any) airports possess market power and the potential to abuse it;
  - identifying those services in which airports may possess market power; and
  - assessing the likely extent and potential impacts of abuse of market power by airports, including efficiency and distributional effects;
- assess the costs and benefits, including efficiency and distributional effects, of price regulation;
- identify options for future price regulation, taking into consideration pricing regulatory arrangements in other countries, and analyse the costs and benefits, including efficiency and distributional effects, of those options; and
- assess what form of price regulation is required, if any.

Scope of the inquiry

As noted above, the terms of reference ask the Commission to report on whether 'there is a need for price regulation of airports, and the appropriate form of any price regulation'. In other words, the terms of reference do not constrain the Commission to considering only those airports subject to price regulation following the granting of leases, that is, core-regulated airports. Other airports include those leased in Phase 2 but not subject to price regulation, regional airports with regular public transport services, and smaller general aviation airports. Nonetheless, the inquiry has focused on whether there is a need for continued price regulation at core-regulated airports and, if so, the appropriate form of such regulation.

Sydney Airport, which is leased but not yet privatised, has not been subject to the price-cap arrangements of other core-regulated airports. As a core-regulated airport, it is, however, subject to other forms of price regulation and therefore included in this inquiry.

This report assesses price regulation as it applied to all core-regulated airports for the period following the granting of leases until October 2001, when regulation changed. It also examines price regulation since October insofar as the effects of the regulatory change are evident between October and the finalisation of this inquiry.

Although the regulatory focus is on price regulation under the PS Act, other regulations are considered insofar as they affect, directly or indirectly, the prices of services provided by airports. Examples of such regulation are the Airports Act, the TP Act, environmental regulations, and international aviation agreements.

Since the release of the Commission's draft report domestic and international events have, at least in the short term, altered the environment in which airports operate. The Commission has endeavoured to address the impact of these events in this report.

Report structure

The airport business in Australia, particularly at core-regulated airports, is described in chapter 2. Chapter 3 describes the regulatory environment affecting the operation of Australian airports, focusing on price regulation and access arrangements. The possible rationales for future price regulation of airport services, together with principles of good regulation and efficient pricing of airport services, are discussed in chapter 4. Chapters 5 and 6 examine potential sources of market power of airports, and the extent to which market power exists for particular airports (chapter 5) and services (chapter 6). Chapter 7 considers the possible pricing and other behaviour of airports, if they operated without price regulation. The potential efficiency and distributional effects of such behaviour are also discussed. Chapters 8 and 9 evaluate the performance of the post-privatisation framework for regulating prices: price-cap and prices-notification arrangements are examined in chapter 8; and price monitoring, quality monitoring and access regulation are addressed in chapter 9. Options for future regulation of airport services are discussed in chapters 10 (cost-based and incentive price regulation) and 11 (price monitoring, access and anti-competitive conduct). Chapter 12 outlines the Commission's preferred approach for future price regulation of airport services.

1.4 Conduct of the inquiry

The Commission received terms of reference for this inquiry on 21 December 2000. As required by the terms of reference, and in line with normal Commission inquiry procedures, the Commission has encouraged maximum public participation. Soon after receipt of the terms of reference, it placed advertisements in the national press and sent a circular to a range of individuals and organisations thought likely to have an interest in the inquiry. An issues paper was released in early January 2001 to assist participants in preparing their initial submissions.

The Commission held informal discussions with organisations, companies, and individuals to seek information and canvass a wide range of views. A list of those with whom discussions were held is set out in appendix B. Fifty submissions were received in response to the issues paper (appendix B). Interested parties were given the opportunity to respond to matters raised in the draft report by way of written submissions and at public hearings held in October 2001. Twenty-nine supplementary submissions were received in response to the draft report (appendix B). Transcripts of hearings and all non-confidential submissions (or non-confidential parts of submissions) are available on the Internet, at Commission and State libraries, and from Photobition Digital Imaging Centre.

The Commission thanks participants for their participation in meetings with Commissioners and in public hearings, and for their submissions.

Professor Richard Snape (Presiding) and Dr Neil Byron were the Commissioners for the majority of this inquiry. Due to the illness of Professor Snape after the hearings on the draft report, the Productivity Commission's Chairman, Gary Banks, formally joined this Division of the Commission in order to provide additional assistance to the inquiry. Due to these events, the final report was signed on 23 January 2002, somewhat later than the original reporting date.

2 Australian airports and their markets

This chapter provides an overview of the airport business, particularly at core-regulated airports. The services and facilities provided at airports by airport operators, and others, are examined. Revenues, charges, costs and profitability of core-regulated airports are assessed in detail. Demand characteristics of the services provided by Australian airports are also discussed. Where relevant, the situation at Australian airports is compared with major airports overseas.

The Australian commercial aviation sector experienced significant change in the second half of 2001 with a substantial reduction in the number of services provided by Australia's then second-largest domestic airline, Ansett Airlines — as well as the repercussions of the 11 September terrorist attacks in the United States. With the most recent official data available to 1999-00 and 2000-01, the picture of the industry described in this chapter is likely to change at least in the short to medium term. At the time of writing it is not possible to assess confidently whether these events will constitute a short-term aberration or the start of a fundamentally different longer-term trend in the demand for aviation and airport services.

2.1 Airport facilities and services

Airports supply a range of products, but their primary function is to provide for planes to land and depart, and to facilitate the interchange of passengers and freight between air and surface transport. Airports range in size, the scope of services provided and the markets served. They serve international, domestic, regional and general aviation markets.

Airport facilities

Airports comprise a combination of landside and airside facilities. Landside facilities cover terminals and the infrastructure within them, including flight information display systems, check-in counters, public amenities, and lounges for passengers. Terminals also provide space for offices and for commercial operations such as car hire, retail, and food and beverage activities.

In addition, landside facilities encompass facilities outside the terminals, such as perimeter roads, car parks, and taxi, bus and rail points linked to terminals by walkways.

Airside facilities include runways, taxiways and aprons, as well as airfield lighting, aircraft parking bays, visual navigation aids, hangars, freight terminals and facilities for aircraft maintenance and refuelling, and in-flight catering.

Airport services

Of the range of services provided at airports in most OECD countries, only a small number is directly supplied by the airport operator (section 2.3). The services and activities provided at airports can be divided into three groups: essential operational services, handling services and commercial activities (Doganis 1992).

Essential operational services

Essential operational services are concerned primarily with ensuring the safety of aircraft and airport users. These include:

- air traffic control and meteorological services;
- runway, building and aircraft maintenance services;
- communications, security, and fire and medical services; and
- aircraft movement services for the runways, taxiways and aprons, such as nose-in guidance and marshalling.

Handling services

Handling activities cover services directly associated with the aircraft itself (sometimes referred to as ground handling) and include:

- cleaning and catering;
- the provision of power and fuel; and
- loading/unloading of baggage and freight.

Also commonly classified as handling activities are services associated with the various stages of processing passengers, baggage and freight through the respective terminals and onto the aircraft. These services include:

- baggage make-up, handling and reclaim, ticketing and check-in; and
- immigration, customs and quarantine services (for international flights).

Commercial activities

Commercial activities cover a range of services and activities not directly related to the interchange of passengers and freight between surface and air transport. They include retail outlets, banks, restaurants and bars, car-hire desks, car parking, and at some large airports, such as Frankfurt, can extend to activities such as conference centres and hotels, cinemas, night clubs and supermarkets.

Airport capacity

The (physical) capacity of an airport refers to its ability to accommodate aircraft movements. The overall capacity of an airport is influenced by the interaction of several factors, some of which are listed below.

- Runway size and design — the runway is the largest single capital asset of an airport and tends to be viewed as the controlling element of airport capacity. The length, width and thickness of concrete of runways determine the type (size) of planes that can land. Runway design factors include the number, spacing and orientation of runways, and the nature of taxiways.
- Airport layout — this can affect both aircraft taxi time and the time taken to unload and process passengers and/or cargo.
- Mix of traffic — capacity is higher at airports that have a larger proportion of their traffic serviced by larger planes.
- Air traffic control — particularly minimum separation requirements that depend, among other things, on plane size.
- Environmental constraints (both natural and regulatory), and general regulatory constraints — for instance, weather conditions, visibility, noise restrictions, movement caps, and curfews.
- Land availability — at the airport and in surrounding areas, as well as regulatory constraints on land use, influences airport design and the potential for capacity expansion.

2.2 Australian airports

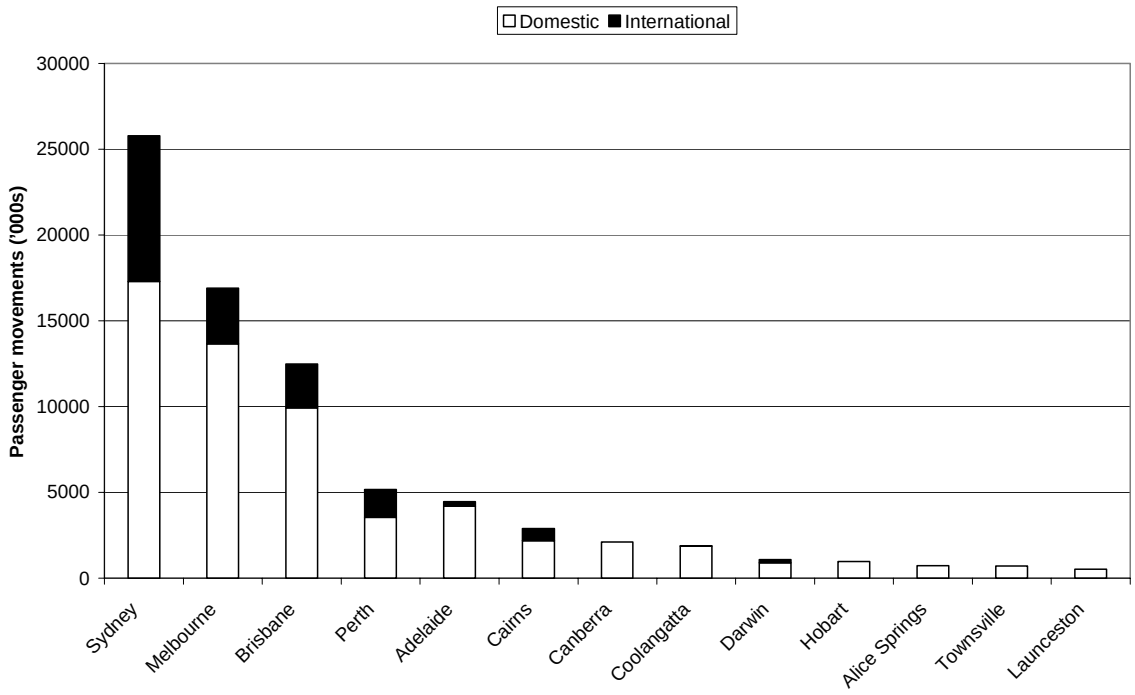
While there are around 2000 operational airports and airfields in Australia, most are small privately-owned facilities catering for general aviation aircraft (GAA). Only a relatively small number (around 200) receive regular public transport (RPT) services. Of the airports that received RPT services in 2000-01, the 10 largest airports accounted for approximately 90 per cent of all scheduled passenger

movements.[1] RPT services in Australia are divided into three categories: international, domestic and regional.[2] In 2000-01, domestic travel accounted for 68 per cent of approximately 76 million passenger movements, followed by international passengers with 22 per cent and regional passengers with 10 per cent.

Core-regulated airports

Except for Cairns Airport, the largest airports in Australia are all core-regulated (chapter 1). In 2000-01, core-regulated airports accounted for 89 per cent of scheduled passenger movements. Sydney, Melbourne and Brisbane airports are by far the largest airports (figure 2.1), together accounting for 67 per cent of total passenger movements at Australian airports in 2000-01.

Figure 2.1 **Passenger movements, Australia's 13 largest airports, 2000-01[a]**



a Revenue passengers on RPT services. Domestic totals include (provisional) regional data.
Data source: DoTRS (unpublished).

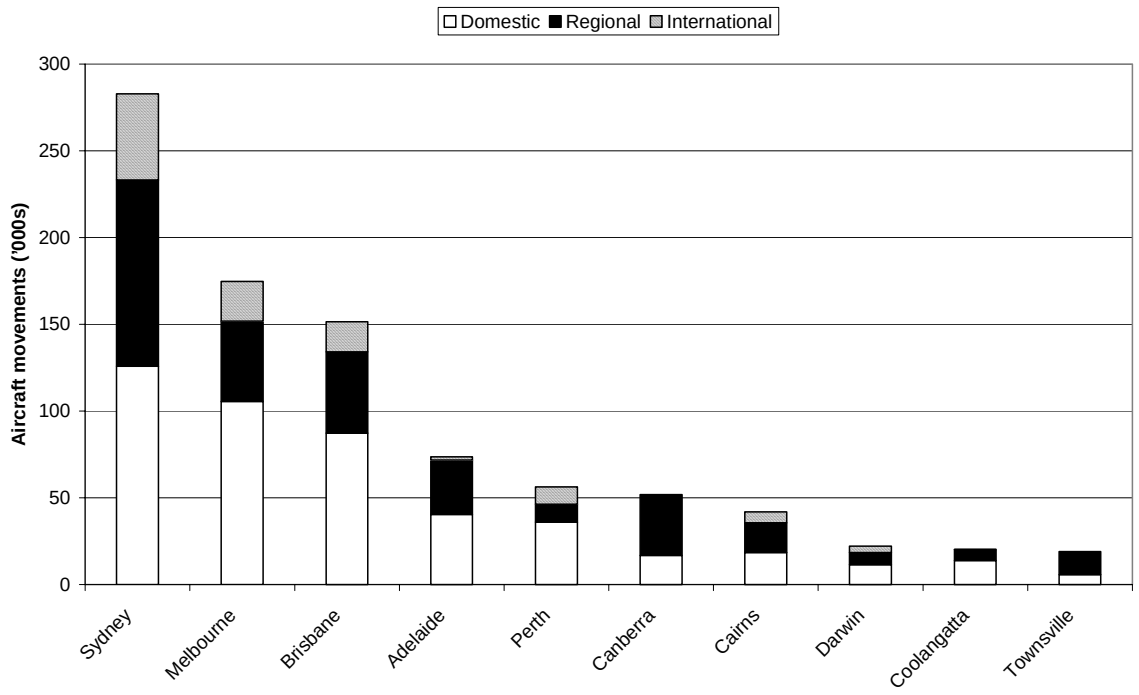
1 Includes revenue passengers arriving at, and departing from, Australian airports on scheduled international, domestic and regional RPT services. Revenue passengers are passengers paying any fare and include passengers travelling on tickets acquired through frequent flyer schemes.

2 'Domestic' and 'regional' are data classifications of revenue traffic carried on scheduled RPT services performed within Australia and its territories. Domestic airline data refer to revenue traffic carried by high-capacity aircraft (aircraft with more than 38 seats or a payload greater than 4200 kg). Regional airline data refer to revenue traffic carried by low-capacity aircraft (aircraft with 38 seats or less, or with a payload of up to 4200 kg) (DoTRS 2000b).

In 2000-01, there were approximately 17 million passenger movements on international RPT services at Australian airports and nearly 96 per cent of these movements were at core-regulated airports, with Sydney accounting for around half.

The 10 largest airports in Australia in terms of RPT aircraft movements in 2000-01 are shown in figure 2.2 — nine of which are core-regulated. Of the remaining core-regulated airports, Hobart Airport was ranked twelfth, Launceston Airport sixteenth, and Alice Springs Airport eighteenth.

Figure 2.2 **Aircraft movements at Australia's 10 largest airports, 2000-01[a]**

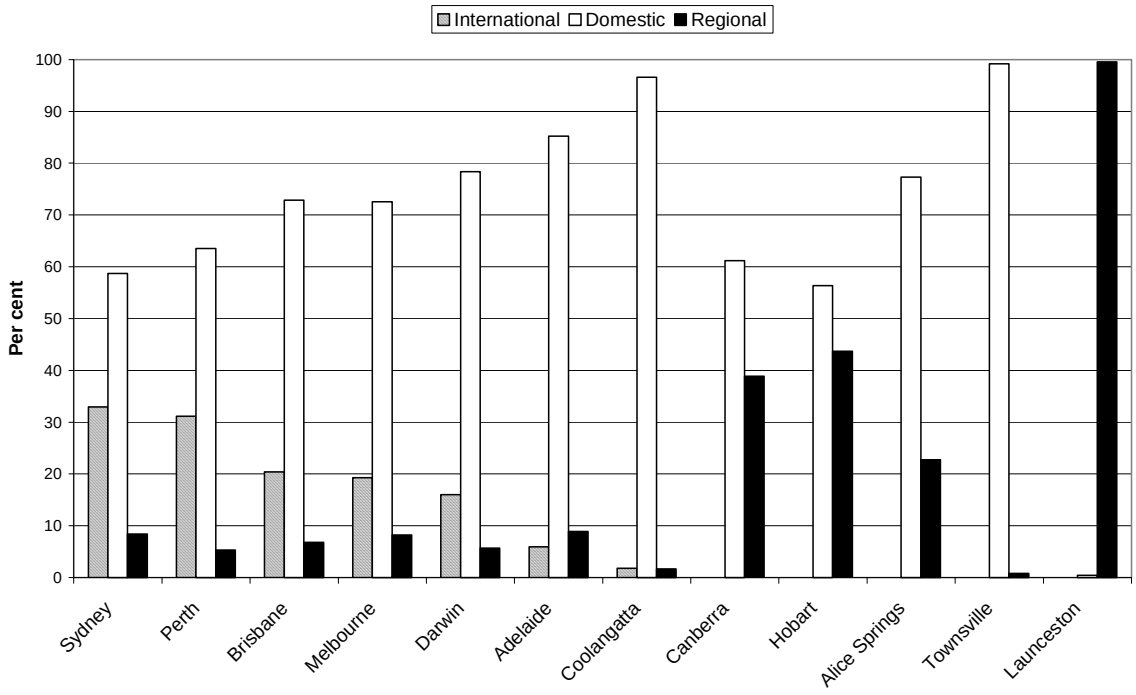


a RPT services. Includes (provisional) regional data.

Data source: DoTRS (unpublished).

The percentage breakdown of passenger movements at core-regulated airports by airline sector is shown in figure 2.3. The share of international passengers is greatest at Sydney and Perth airports, where international passengers comprise around 30 per cent of total passenger movements.

Figure 2.3 **Passenger shares at core-regulated airports, 2000-01[a]**



a Based on revenue passengers carried on scheduled international, domestic and regional RPT services. Includes (provisional) regional data.

Data source: DoTRS (unpublished).

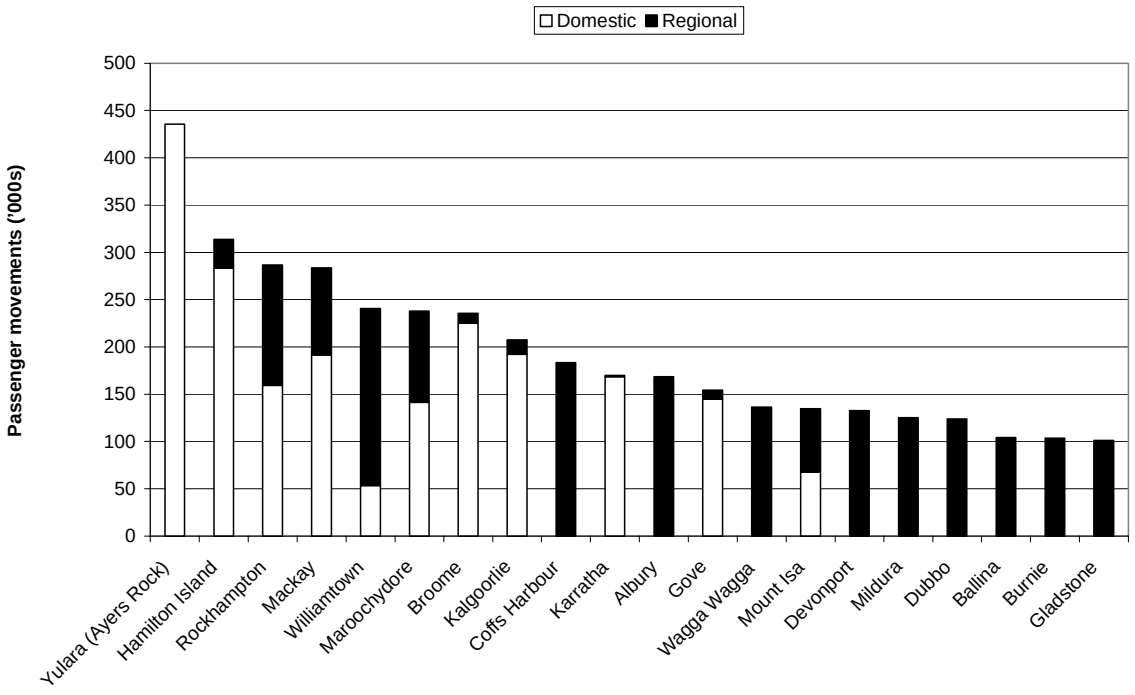
Other airports

The 20 largest non-core-regulated airports (excluding Cairns) are shown in figure 2.4. Of these airports, Mount Isa is a privatised ex-Federal Airports Corporation (FAC) airport,[3] and only Broome received (limited) international traffic. Domestic airlines account for around 60 per cent of passenger movements at these airports with the remainder made up of passengers on regional airlines.

In addition, a number of capital cities have large airports (in terms of aircraft movements) that primarily serve the general aviation sector. These include privatised ex-FAC airports such as Archerfield (Brisbane), Jandakot (Perth), Moorabbin (Melbourne) and Parafield (Adelaide).

3 Australian Airports Limited owns and operates both Mount Isa and Townsville airports.

Figure 2.4 **Passenger movements at Australia's 20 largest non-core-regulated airports, 2000-01[a]**



a Excludes Cairns Airport. Revenue passengers carried on scheduled international, domestic and regional RPT services. Included with the domestic passenger movements at Broome Airport are approximately 4200 international passenger movements. Includes (provisional) regional data.

Data source: DoTRS (unpublished).

2.3 The airport business at core-regulated airports

Australia has progressed further down the path of privatisation of major airports than most other OECD nations. Most major airports around the world remain publicly-owned facilities, although there is considerable variation in public ownership structures across countries.[4] Of the OECD countries, the United Kingdom, Austria, Denmark, New Zealand, Germany and Japan are among those moving (or which have moved) to privatisation (Button and Stough 2000). In 1997,

4 Ownership can take the form of a central government having control of all, or the majority, of a country's airports (such as Greece, Sweden and Norway); alternatively, ownership of airports can reside with regional or local governments. Another variation on the public ownership model is for the government to establish an authority to manage one or more airports on its behalf. In the late 1970s and 1980s, several national airport authorities came into being, modelled on the British Airports Authority, as it was prior to privatisation. Examples include the Airports Authority of Thailand, the Israeli Airports Authority, the Mexican Airports Authority and Aer Rianta (the Irish airports authority).

the Federal Aviation Administration in the United States introduced an airport privatisation pilot scheme with the opportunity for five airports to be privatised — by 2000, only two sales had been completed.[5]

Ownership

Nine unlisted companies manage Australia's 11 privatised core-regulated airports.[6] The *Airports Act 1996* includes some limits on the amount of foreign ownership of airport companies and on the degree of common ownership of certain pairs of airports (chapter 3). Two overseas airport operators have interests in Australian airport companies: BAA plc[7] in Australia Pacific Airports Corporation (APAC), which operates Melbourne and Launceston airports; and Amsterdam Airport Schiphol in Brisbane Airport Corporation (BAC). A number of investment and funds management companies hold substantial interests in airport companies. At some airports, there is a degree of public ownership with local and State governments maintaining an interest in the operating company.[8]

Sydney Airports Corporation Limited (SACL), a corporatised Commonwealth entity, operates Sydney Airport. SACL also operates the three other Sydney basin airports (Bankstown, Camden and Hoxton Park). As noted in chapter 1, Sydney Airport is expected to be sold in the first half of 2002.

Structures and responsibilities

While the range of services and activities provided at airports varies across the core-regulated airports, the division of responsibility for the provision of these services (operational, handling and commercial activities) follows a similar pattern. As with most major airports in developed countries (and as was the case with the core-regulated airports' previous operator, the FAC) the airport operator provides relatively few services directly to airport users. Rather, Australian airport operators tend to provide and maintain facilities that allow other organisations to carry out their activities. These organisations include government agencies such as

5 A 99-year lease on Stewart International in New York State has been sold to National Express, and Niagara Falls International has been sold to a Spanish company, CINTRA (TRL 2000b).

6 Australia Pacific Airports Corporation operates Melbourne and Launceston airports, and Northern Territory Airports Group operates Darwin and Alice Springs airports.

7 BAA plc operates a number of airports in the United Kingdom, including Heathrow, Gatwick, Glasgow and Edinburgh airports.

8 For example, the Port of Brisbane Corporation, a wholly State-owned enterprise, has interests in BAC, and Launceston City Council has an equity share in Australia Pacific Airports (Launceston) Pty Ltd.

Airservices Australia (ASA), airlines (and other specialist providers of operational and handling services) and concession holders.

ASA, a government-owned commercial authority, is responsible for air traffic control and airspace management services at all core-regulated airports and 14 other major Australian airports where traffic levels are sufficiently large to require air traffic control services. ASA also delivers aeronautical information, communications and, at 16 major airports (including all core-regulated airports), rescue and firefighting services.

While ASA is responsible for air traffic control and airspace management services, it is not responsible for allocating landing and take-off slots. The Airports Act (described in chapter 3) provides for the Minister of Transport and Regional Services to authorise a body to be the slot coordinator at Australian airports. Currently, Airport Coordination Australia (ACA), a private company, is the authorised slot coordinator. ACA provides timeslot management services for all international airline services and new entrant airlines servicing domestic routes at Australian airports, and all operations at Sydney Airport.[9]

Other Commonwealth government agencies that provide services at core-regulated airports include the Civil Aviation Safety Authority (which conducts safety regulation of civil air operations), the Australian Customs Service, the Australian Quarantine and Inspection Service, the Department of Immigration and Multicultural Affairs, and the Australian Federal Police.

Airport operators are required to provide a number of government-mandated security services. The seven core-regulated airports with international RPT services are required to engage Australian Protective Services, a Commonwealth government security agency, to provide a counter-terrorist first response capability. Other required services are security screening of passengers and hand-baggage, and checked-baggage. Most airport operators engage specialist companies to provide these services (there is no requirement to engage any particular provider), although there is some variation across airports as to whether the airport operators supply the equipment required for passenger and baggage screening, or lease it from a specialist provider.

Australian airport operators also provide and maintain runways, taxiways, visual navigation aids, airfield lighting, roads and aircraft parking areas. Usually, ground-handling services such as cleaning, the provision of power, baggage handling and

9 Slot management at Sydney Airport is regulated separately from other airports under the *Sydney Airport Demand Management Act 1997* (chapter 3).

other operational services (for example, aircraft push-back and towing, and ground engineering) are supplied by the airlines and/or independent suppliers.

Airport operator involvement in other airside activities, such as refuelling and freight storage, is limited to the provision of basic infrastructure, or to the provision of land to allow others to provide the infrastructure and services. At larger airports, oil companies often provide both refuelling facilities and services at airports, the airport operator provides land on which oil companies can build storage and reticulation equipment. Oil companies often operate the storage and reticulation systems as a joint venture (referred to as a joint user hydrant installation (JUHI)). Airports historically have charged for the use of land to build refuelling facilities by way of rent payable under leases and licence fees (appendix E). However, at small airports where fuel is trucked to aircraft, the situation may differ: the airport operator provides facilities for access to the aircraft and it may also provide for storage of fuel and equipment (ACCC 1998b).

Landside, airport operators manage international and domestic common-user terminals and the infrastructure associated with these facilities, such as check-in counters, baggage reclaim and handling systems, escalators, flight information systems and passenger lounges. Airlines tend to operate the check-in and baggage and freight facilities. Airport operators also manage the provision of retailing and advertising services at these terminals.

The arrangements for the management of the domestic terminals used by Australia's major domestic carriers, Ansett and Qantas Airways, have been quite different from those at the common-user terminals (both domestic and international). Since the late 1980s, the two major domestic airlines have operated their own domestic terminals under long-term leases negotiated prior to the establishment of the FAC. Under the leases, which at most core-regulated airports run to around 2018, airlines are responsible for all operational aspects at the terminal, including managing the provision of retailing and advertising activities. In addition, at some airports, including Melbourne and Sydney, airline responsibility extends to providing and maintaining terminal infrastructure, with the airport operator providing only the land for the domestic terminals under the leases. At other airports, such as Brisbane, the airport operator provides and maintains the terminal infrastructure. While Qantas continues to operate its domestic terminals under these arrangements, the future of Ansett's domestic terminals is uncertain. Currently, Ansett's domestic terminals are operated by Ansett's administrator and are being used by Ansett Mark II.

The airport operators (or, in the case of domestic terminals, the airlines) engage specialist operators to provide commercial activities. Retail, car-hire and catering activities are delivered under this type of arrangement. Car-parking management

appears to be the only commercial activity that some airport operators perform directly. Airport operators at Brisbane, Perth and Sydney airports, for example, manage some or all of their car-parking services directly, whereas operators at Melbourne and Canberra airports have engaged the services of a car-parking management company.

International comparisons

The arrangements for the provision and management of airport facilities and services at core-regulated airports generally are similar to those in place at major airports in other developed countries. Although the ownership structures differ significantly, airport operators do not tend to provide many services directly. Instead, as is the case in Australia, they manage the facilities and infrastructure that allow airlines and other organisations to carry out their business.

Common to nearly all airports is that local or central government authorities provide air traffic control and navigation services. Even when the airport operator provides these services, government policies or international arrangements (chapter 3) heavily influence the nature of the service.

However, at some airports there are significant differences in the organisational structure of service provision. Some major European airports are directly involved in the provision of ground-handling services and, until recently, a number of airports were the sole providers of these services (such as Frankfurt and Milan airports). This situation altered as a result of a European Commission directive aimed at introducing competition in ground-handling services at all European Community airports.[10]

Some airport operators also are directly involved in the provision of commercial activities. For example, Aer Rianta, the Irish airport authority, operates the duty and tax free shops at its airports (including Dublin) and, in the case of Shannon Airport, it operates catering and bars (Aer Rianta no date). At Fiumicino Airport in Rome, the airport authority also operates a number of retail outlets (ADR no date).

Perhaps the most significant difference between the organisational structure of core-regulated airports and those of airports overseas is in the management of domestic terminals. Airline management of their own terminal infrastructure is unusual in an international context. The only other developed country where this type of arrangement is common is the United States, where airlines own or lease most

[10] Council Directive 96/67/EC of 15 October 1996 on access to the ground-handling market at Community airports.

terminals in major airports (although, as in Australia, major airports often have a common-user terminal that is managed by the airport operator).

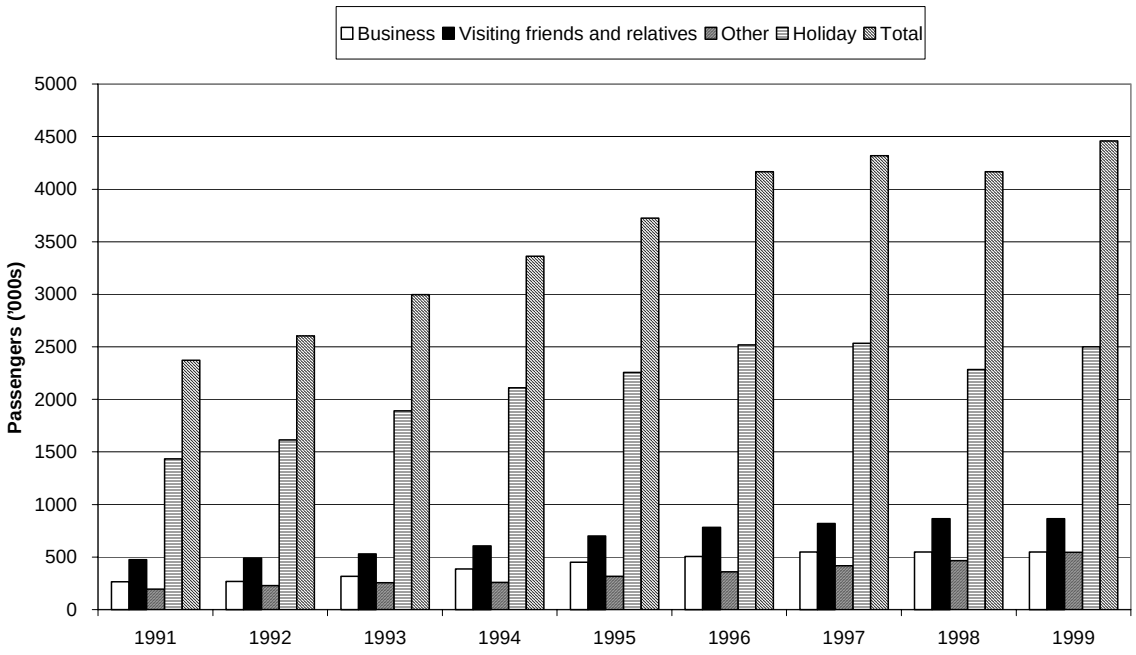
Demand for airport services

The demand for airport services is, in general, a derived demand: the demand for airport services is derived from the demand for airline services; in turn, the demand for airline services is derived from the demand for business meetings, for visiting friends and relatives, for migration, for tourism, for freight handling and so on. The demand for airport services is also filtered through the cost structure of other input providers, including airlines. This section describes in broad terms the different air travel segments served by Australian airports, and changes in demand over time. Demand elasticities of airport services are discussed in chapter 5.

Air travel and airports

Most international visitors come to Australia for tourism purposes (figure 2.5) — around 56 per cent in 1999. These visitors to Australia must choose an international gateway airport, the five largest being Sydney, Brisbane, Melbourne, Perth and Cairns.

Figure 2.5 **International visitor arrivals, by purpose of visit, 1991–99[a]**



a Refers to foreign visitors only (does not include Australian travellers).

Data source: ABS (*Overseas Arrivals and Departures, Australia*, Cat. no. 3401.0).

The airlines in the domestic market link the principal cities throughout Australia by operating high-capacity jet aircraft. In 2000, 10 routes (city pairs) accounted for over two-thirds of all passenger movements in Australia (table 2.1). For each principal city, the domestic market is concentrated at one airport. The regional market generally links the smaller centres with the larger principal cities, with each regional city served by one airport.

Table 2.1 **Major routes (city pairs) by passenger movements, 2000[a]**

Rank	*City pair*	*Passengers*
1	Melbourne – Sydney	5 877 971
2	Brisbane – Sydney	3 734 524
3	Brisbane – Melbourne	1 875 504
4	Adelaide – Melbourne	1 373 578
5	Coolangatta – Sydney	1 250 460
6	Adelaide – Sydney	1 180 389
7	Perth – Sydney	1 043 461
8	Brisbane – Cairns	994 818
9	Melbourne – Perth	978 874
10	Canberra – Sydney[b]	907 688
	Other	8 854 557
	Total	**28 071 824**

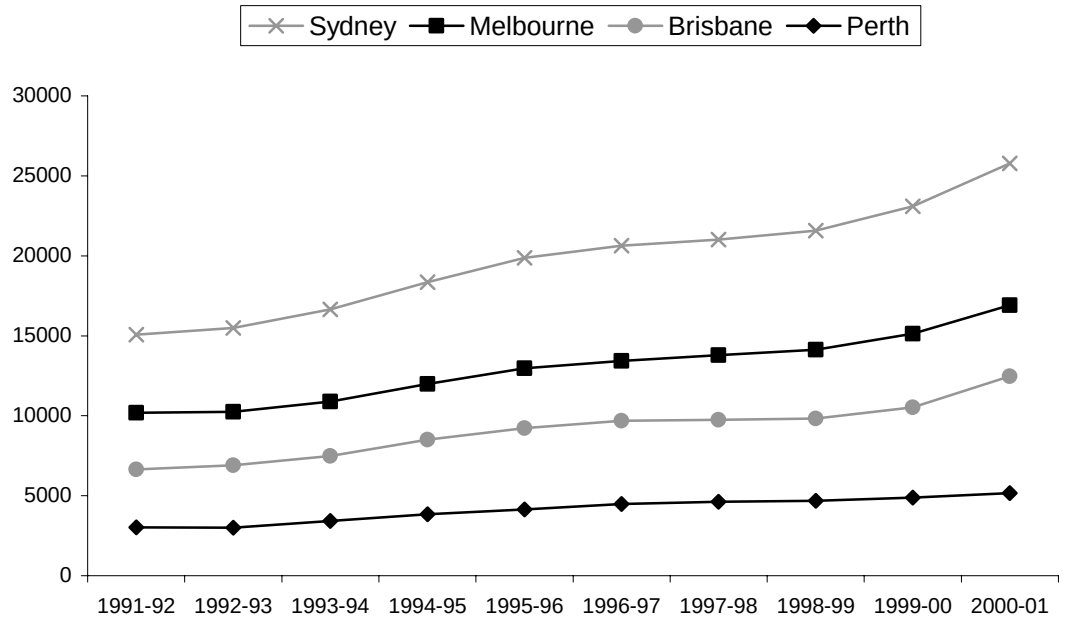
a Includes passengers carried on international flights operated by Australian airlines over these city pairs. **b** Includes passengers carried by subsidiary regional airlines.

Source: DoTRS (2001).

During the 1990s, passenger movements increased significantly at core-regulated airports (figure 2.6). Over the period 1991-92 to 2000-01, passenger movements increased by more than one-third at all core-regulated airports, except Alice Springs, Coolangatta and Launceston. Passenger movements increased at Coolangatta and Launceston airports by 26 and 14 per cent respectively over the same period and remained virtually unchanged at Alice Springs Airport. While growth in passenger movements has generally been strong, growth in international passenger movements at some of the major gateway airports (particularly Brisbane and Cairns) slowed in the late 1990s, partly as a result of the economic downturn in Asia. Passenger movements increased substantially at a number of core-regulated airports in 2000-01 with the entry of two discount airlines to the domestic aviation sector.

Figure 2.6 **Passenger movements at core-regulated airports, 1991-92 to 2000-01[a]**

Passenger movements ('000s)



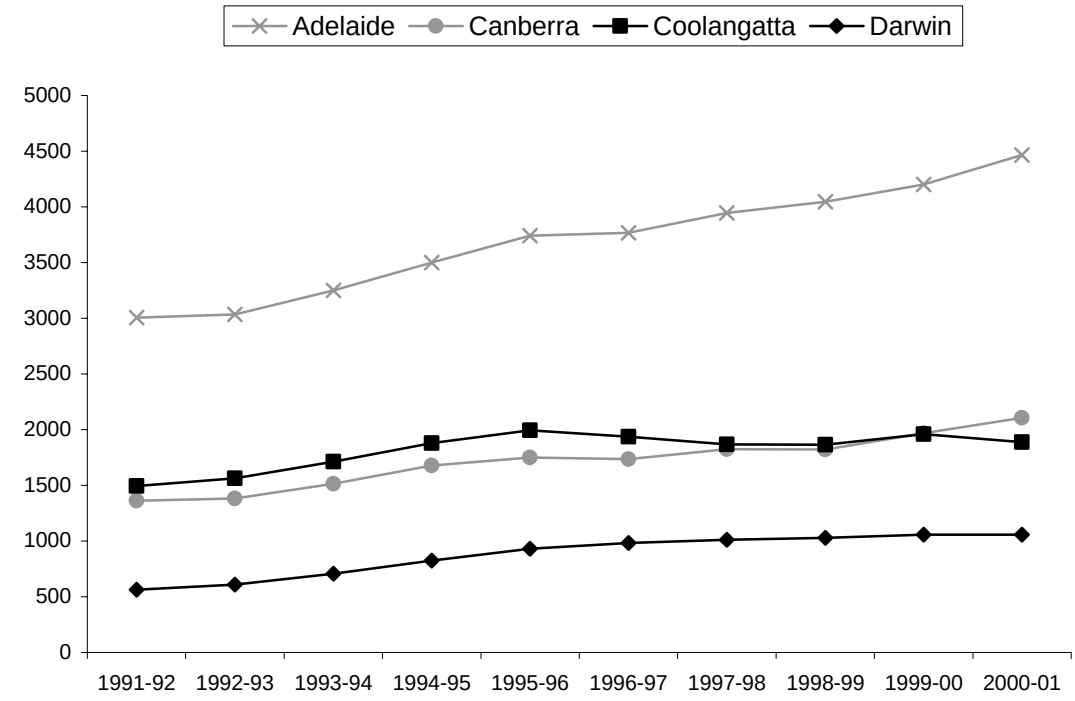


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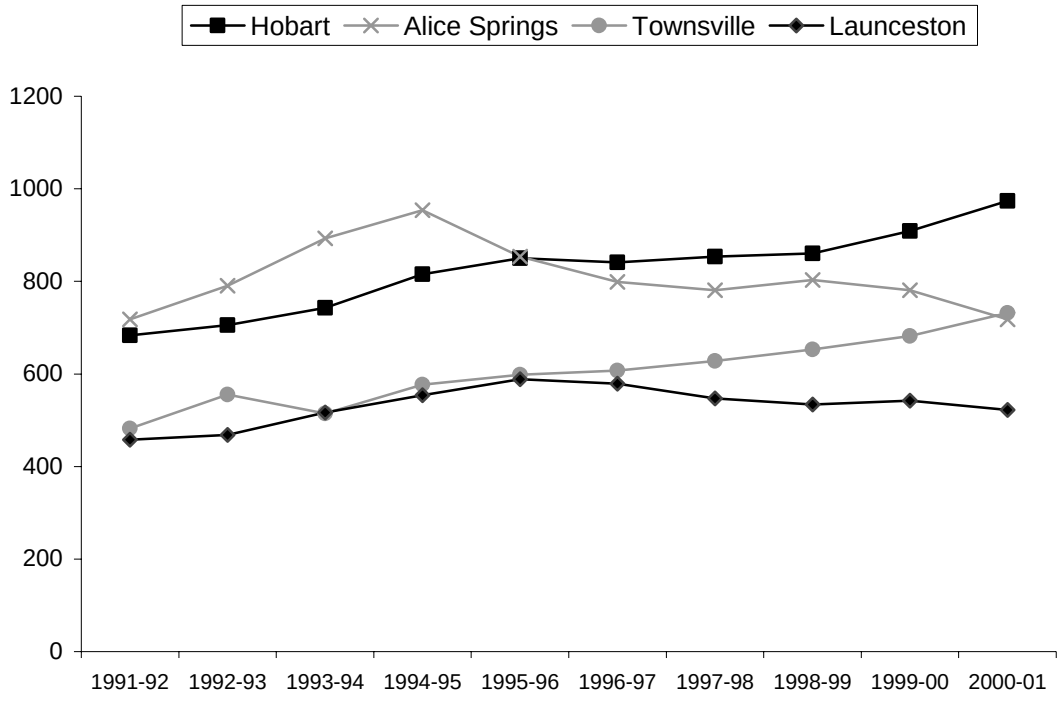
Figure 2.6 (continued)



a Based on revenue passengers carried on scheduled international, domestic and regional RPT services. Includes (provisional) regional data.

Data source: DoTRS (unpublished).

Demand for airport services in 2001

The first half of 2001 was characterised by high growth in passenger movements on major domestic routes. The entry of two airlines providing discount services in the domestic market in 2000 — Impulse Airlines in June and Virgin Blue in August — contributed to this growth. The total number of domestic passenger movements over the first six months of 2001 was around 10 per cent higher than the corresponding figure in the previous year.[11]

However, in the latter half of 2001 the aviation industry altered substantially. Impulse Airlines ceased independent operations in May, and in September Australia's second-largest domestic carrier, Ansett, entered into voluntary administration and briefly suspended all operations. By October 2001, Ansett had resumed operations as Ansett Mark II, albeit with significantly reduced capacity. As at January 2002, questions over the longer-term structure and organisation of the airline remained unresolved. This, combined with a general reduction in

11 Includes regional passenger movements (DoTRS, unpublished data).

international air travel worldwide in response to the terrorist attacks in the United States on 11 September and their aftermath, resulted in a significant reduction in flights and consequently in the demand for airport services. The initial impact of the reduction in Ansett services was felt heavily at all core-regulated airports, in particular those dependent on domestic airlines. At Coolangatta Airport, for example:

> In the week following the Ansett collapse domestic seat capacity … was reduced to 64 per cent of that for the week before the collapse. For the week ending 4 October this had fallen to 62 per cent before increasing to 67 per cent for the week ending 11 October. (sub. DR58, p. 2)

In October 2001, Adelaide Airport noted that the reduction in Ansett services resulted in:

> … a loss of around 182 weekly flight arrivals equivalent to 43 per cent of the Airport's domestic landed tonnes/week and a similar short-term reduction in available seat capacity to and from the city. (sub. DR57, p. 3)

Since September 2001, Ansett Mark II has resumed some services, and Qantas and Virgin Blue have moved to increase capacity on a number of routes or introduced services on new routes. However, domestic airline capacity is still below the level that existed when Ansett was fully operational.

These changes in the structure of the airline industry are expected to result in Qantas having a significantly larger share of the domestic aviation market in the short to medium term. In the medium term industry analysts have predicted that Qantas' share of the domestic commercial aviation market could remain at 65 per cent at least and potentially much higher (Bartholomeusz 2001; Ferguson and Meyrick 2001).[12]

Sources of airport revenue

In 1999-00, total revenue earned by the operators of core-regulated airports was approximately $783 million. Sydney, Melbourne and Brisbane airports together accounted for approximately 80 per cent of this revenue.

Airport revenue can be divided into aeronautical and non-aeronautical revenue. Generally, aeronautical revenue refers to the revenue earned by the airport operator from the provision of a number of key essential operating and handling services and facilities.

[12] Prior to September 2001, Ansett had 37 per cent of the domestic market, Qantas had 56 per cent and Virgin Blue had 7 per cent (Ferguson and Meyrick 2001).

In Australia, for core-regulated airports over the period 1997-98 to 2000-01, aeronautical revenue was defined to include revenue earned by airports from services subject to prices notification under the *Prices Surveillance Act 1983* (chapter 3). Included was revenue derived from the provision of a number of essential operating and handling services and facilities, with most aeronautical revenue earned from runway charges and (international and domestic common-user) terminal charges.[13] From 1998-99, revenue from vehicle access charges levied on taxis at Brisbane, Perth and Canberra airports was classified by the ACCC as aeronautical revenue (appendix E). At all three airports in 1999-00, revenue from these vehicle access charges amounted to less than 1 per cent of total aeronautical revenue.

In 1999-00, across all core-regulated airports, only 34 per cent of total revenue was earned from aeronautical services. Coolangatta Airport reported the highest proportion of revenue from aeronautical services — 55 per cent. In 1995-96, prior to privatisation, when all current core-regulated airports were operated by the FAC, the average share of revenue from the same bundle of aeronautical services at the same airports was 38 per cent. Since 1995-96, the share of revenue earned from non-aeronautical services has increased at all privatised core-regulated airports apart from Coolangatta and Townsville airports (figure 2.7).

A number of airport operators — such as BAC (sub. 8) and Westralia Airports Corporation (WAC, sub. 21) — stated that the potential growth opportunities from non-aeronautical services were significant factors contributing to their decision to become involved in the airport business in Australia, and the final price paid. As WAC noted:

> The bidders for [Perth Airport] were attracted to statements in the information memorandum that highlighted … unexploited commercial potential in retail, trading, car parking, ground transport and property development. (sub. 21, p. 6)

Retail operations, in particular, have become an important source of revenue for airports, and an area that airport operators have sought to develop since privatisation. APAC (2000a) noted that revenue from retail operations has increased by 45 per cent at Melbourne Airport since privatisation.[14]

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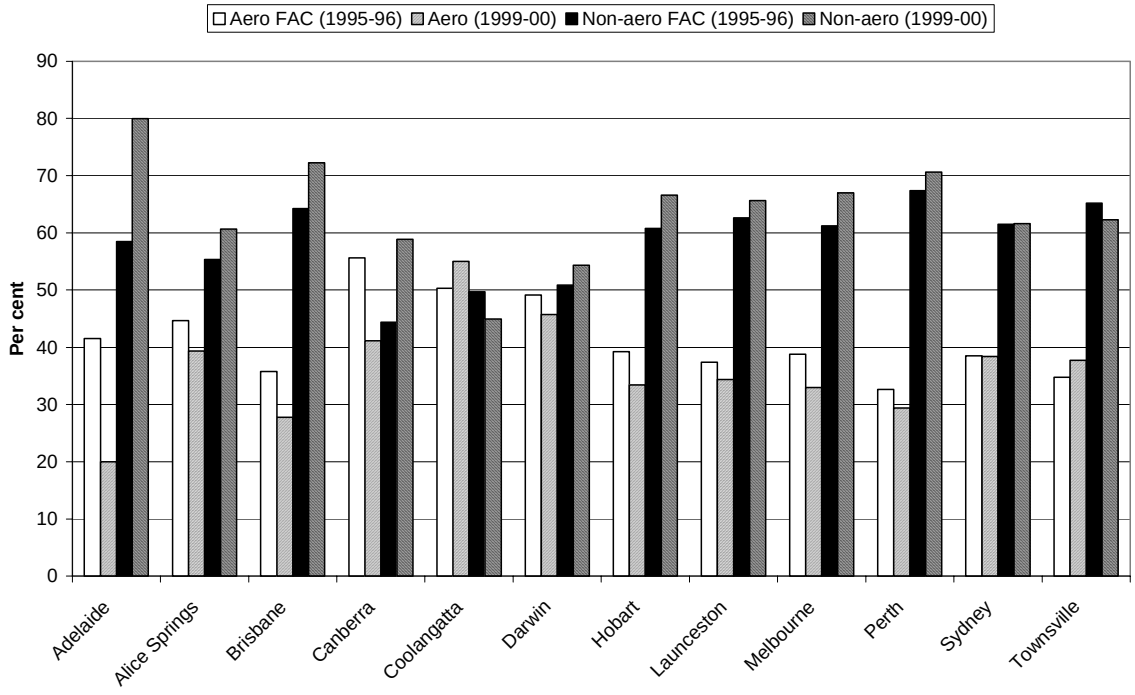
13 Also included in aeronautical revenue were airport charges levied on airlines to cover the costs of services provided by Australian Protective Services.

14 Retail revenue is a component of non-aeronautical revenue. In this instance, retail revenue refers to four revenue streams: (1) duty free, food and beverage, currency exchange and speciality stores within the international terminal; (2) short- and long-term car parks; (3) car-rental concessions; and (4) advertising sites.

Figure 2.7 **Comparison of revenue shares: FAC and core-regulated airports[a]**



a The high share of non-aeronautical revenue at Adelaide Airport may be explained partly by the importance of property revenue to the airport. Property revenue accounts for around half of Adelaide Airport's total revenue, with major sources including the domestic terminals leased to Qantas and Ansett, and a light-industrial business precinct.

Data sources: ACCC (2001b–f); FAC (1996).

As noted above, airport operators generally do not provide retail services directly; rather, they provide space for retailers to carry out their business. The payment agreements between airport operators and retailers are based primarily on concession fees (whereby airport operators receive payments based on the volume of revenue generated by the retailer),[15] often complemented by a small fixed annual rental component. Airports can be an attractive location for retailers because they provide access to potentially large volumes of relatively affluent customers (Melbourne Airport, sub. 7). Doganis (1992) noted that concession income is strongly related to passenger numbers generally, and to the number of international travellers in particular. The two airports at which the percentage of non-aeronautical revenue has fallen since privatisation — Coolangatta and Townsville — do not have significant international RPT services.

15 Concession fees can also be based on passenger numbers, although this form of payment is less common.

Several privatised core-regulated airports — particularly Brisbane and Adelaide — see property revenue as a means of increasing non-aeronautical revenue. Brisbane Airport, for example, has established a light-industrial precinct on airport property to take advantage of its large land holdings. Current and committed tenants at the precinct include a mobile phone and accessories wholesaler and Australia Post, as well as operations more traditionally associated with airports, such as freight operations (BAC 2001).

Rentals paid to airport operators by the holders of the domestic terminal leases are classified as property revenue, in both the regulatory accounts and company annual reports. Property revenue also includes payments to airport operators from the providers of operating and handling services for the use of land and facilities. Consequently, property revenue is often a significant component of an airport operator's total revenue. It is approximately one-third of total revenue at Hobart Airport (sub. 11) and nearly half at Adelaide Airport (Adelaide Airport Limited (AAL), sub. 20).

Several participants noted that a significant proportion of an airport operator's revenue, and aeronautical revenue in particular, is generated from a very small number of airlines. Prior to the reduction in Ansett services, Melbourne Airport noted that approximately 80 per cent of its aeronautical revenue came from four customers, with Qantas accounting for around 40 per cent. These same four customers accounted for 45 per cent of the airport operator's total revenue (sub. 7; trans., p. 104 in PC 2001a). At Perth Airport, Ansett and Qantas accounted for approximately 46 per cent of aeronautical revenue and 64 per cent of property revenue; in addition, 'when airline alliances are taken into account, 84 per cent of aeronautical revenues and 68 per cent of property revenues are earned from the two Alliances [Star and One World]' (sub. 21, p. 33).

At smaller airports, the reliance on the major domestic carriers tended to be even greater. At Launceston Airport, for example, Qantas and Ansett accounted for 98 per cent of aeronautical revenue (Melbourne Airport, sub. 7). In March 2001, AAL noted:

> Qantas and Ansett alone, and their regional airlines … contribute about 75 per cent of aeronautical revenues at Adelaide Airport (or approximately 23 per cent of total current revenue) … In total, more than half of AAL's total revenue is sourced from Qantas and Ansett. (sub. 20, p. 8)

With Ansett services reduced, the reliance of core-regulated airports on Qantas as the major source of aeronautical revenue will increase, at least in the short to medium term. In the longer term, it appears likely that operators of core-regulated airports will continue to rely on a small number of customers for the majority of their aeronautical revenue.

Charges for aeronautical services

Charges subject to the price cap at core-regulated airports at June 2000 are shown in table 2.2. Airport operators typically levy a landing charge for the use of runways, taxiways and aprons (airport operators do not supply air traffic control services) and, where they operate the terminal, a terminal charge. At some airports additional charges are levied for aircraft parking. In addition to charges covered by the price cap, airport operators levy charges to recover the costs of government-mandated security services, and to recover the costs of necessary new investment as approved by the ACCC.

Table 2.2 **Airservices Australia (ASA) charges, and charges subject to the price cap at core-regulated airports, 2000** [a,b]

	Runway charges	*International terminal charges*	*Aircraft parking*	*ASA*[c]
	A$/t MTOW	A$/t MTOW	A$/aircraft	A$/t MTOW
Adelaide	4.72	1.05	11 per day	10.39
Alice Springs	5.55	na	0	12.14
Brisbane	5.30	2.43	11 per day	5.67
Canberra	(2.27)[d]	na	0	10.83
Coolangatta	5.32	na	0	11.99
Darwin	5.55	1.02	0	8.89
Hobart	5.55	1.05	11 per day	13.79
Launceston	5.61	na	0	14.53
Melbourne	5.34	3.80	50 per day	4.06
Perth	5.06	2.48	10 per day	8.19
Sydney — July 2000 charges	2.92	7.92	11 per day[e]	4.65
Sydney — May 2001 charges	6.88[f]	(35.10)[g]	35 per 15 min[h]	4.65
Townsville	5.75	1.05	0	4.33[i]

[a] GST exclusive. Charges are for RPT services greater than 10 tonnes (MTOW). [b] As at 30 June 2000. [c] As at 1 July 2000. ASA charges include terminal navigation charges, and aviation rescue and firefighting charges. [d] Per passenger charge. [e] For each aircraft parked in a designated general aviation parking area (an aircraft parked for more than two hours is charged the daily rate). A different charge is levied on aircraft parking in a designated aviation area. Prior to the ACCC May 2001 decision, the charge was $350 per day. [f] Based on a runway charge of $3.44 per tonne (MTOW), which is levied at landing and take-off. Other core-regulated airports currently charge for landing only. [g] Based on a per passenger charge of $17.55, which is levied on each arriving and departing passenger (excluding transit passengers), and covers runway, international terminal facilities, and passenger and checked-baggage security screening services. The charge was introduced in November 2001 and is a restructuring of the May 2001 ACCC-approved prices. [h] For aircraft parking in a designated aviation area. [i] Terminal navigation charges only. **na** Not applicable. **MTOW** Maximum take-off weight.

Sources: ACCC (2001b–l, n); ASA (2000).

The starting point for runway charges at privatised airports was the FAC charge at the time of privatisation, which was the same at all these airports apart from

Adelaide. The differences in the runway charges shown across privatised airports in table 2.2 reflect differences in their respective price-cap arrangements (chapter 3). The starting point for terminal charges was also the FAC charge — shortly before privatisation (in January 1997) the FAC increased charges for the use of terminals at Sydney, Melbourne, Brisbane, Adelaide and Perth airports by varying amounts for each airport.

Most user charges at core-regulated airports are levied on the same basis as the system used by the FAC. User charges still tend to be calculated on the basis of the maximum take-off weight (MTOW) of the aircraft. However, some airports have introduced passenger-based charges, particularly for the international and common-user domestic terminals. Sydney Airport now levies a per passenger charge on international passengers to cover runway, international terminal, and passenger and checked-baggage security screening services. Melbourne Airport charges for use of its multi-user domestic terminal on a per passenger basis. Canberra and Coolangatta airports (see below) are currently the only core-regulated airports to levy runway charges on a per passenger basis.

Also shown in table 2.2 are the ASA charges for navigation and rescue services. ASA moved from network charges to location-specific charges (based on full cost recovery) for firefighting and rescue services in 1997 and for terminal navigation charges in 1998. The variation in ASA charges is much greater than that in airport charges and, as costs are largely fixed, unit charges are higher in airports with lower traffic volumes.

Airport operator charges outside the price cap

Under the price-cap regime, airport operators are permitted to 'pass through' to users 100 per cent of the costs related to government-mandated security requirements. Such charges do not affect compliance with the price cap. Cost pass-through is allowed for charges levied on the airport operator by Australian Protective Services and for the provision of passenger and checked-baggage screening services.

Pass-through provisions also exist for charges levied to recover costs for necessary new investment (NNI) (chapter 3). Examples of ACCC-approved NNI charges at core-regulated airports since privatisation are shown in box 2.1. Airport operators are permitted to increase approved charges in line with the CPI.

Box 2.1 **Examples of ACCC-approved necessary new investment charges**

- In August 2000, the ACCC approved the introduction of a charge of $1.65 per passenger (GST inclusive) to recover the costs associated with the construction of the multi-user domestic terminal at Melbourne Airport. The decision was based on a commercially-negotiated agreement between Melbourne Airport and Impulse and Virgin Blue airlines. (ACCC 2000g)
- In April 2000, the ACCC approved increases in landing and international terminal charges at Brisbane Airport to recover the costs of a range of projects (including apron expansion and improvements in taxiway lighting). Landing charges were permitted to increase by 3 cents a tonne in 2000-01 and by a further 9 cents a tonne in 2001-02 (MTOW). International terminal charges were permitted to increase by 38 cents a tonne in 2000-01 and by a further 61 cents per tonne in 2001-02 (MTOW). (ACCC 2000f)
- In April 2000, the ACCC approved an increase in landing charges at Perth Airport of 2 cents per tonne (MTOW), and the introduction of a charge of 10 cents per international passenger. The charges were allowed in order to recover the costs of a range of projects over the period 1997-98 to 1999-00. (ACCC 2000c)

Airport charges since October 2001

In recognition of the need to give airports greater pricing flexibility to manage the sudden and significant decline in the volume of airport traffic, the Commonwealth Government changed prices oversight arrangements at core-regulated airports in October 2001 (chapter 3). Among other things, the changes allowed the Phase 1 airports (Brisbane, Melbourne and Perth) a once-only price increase (by varying amounts for each airport) as a pass-through in the price cap. Price-cap regulation was removed from all other privatised core-regulated airports (with price-cap regulation replaced by price monitoring of aeronautical services at some airports).[16]

Since implementation of the new prices oversight arrangements, there have been changes in the level and, in some cases, structure of charges for airport services at most core-regulated airports (all charges GST inclusive). In many cases, airports offer various rebates. However, details of these often are confidential (chapter 7).

- The Phase 1 airports — Melbourne, Brisbane and Perth — have all increased charges by the full amount determined by the ACCC to be in accordance with the Government's October announcement. However, the structure of the price changes differs by airport.

16 Prices of aeronautical-related services continue to be monitored at some airports.

- Melbourne Airport increased average aeronautical charges by 6.2 per cent in January 2002. Landing charges were increased by 59 cents to $6.40 per tonne (MTOW), an increase of approximately 11 per cent. At the same time, international terminal charges were reduced by 59 cents per tonne, leaving the total charge (per tonne) paid by international airlines unchanged.
- In November 2001, Brisbane Airport increased all aeronautical charges by 6.7 per cent.
- In November 2001, Perth Airport increased domestic landing charges by 19 per cent to $6.30 per tonne (MTOW). Other charges remained unchanged. This represented a weighted average increase in aeronautical charges of 7.2 per cent.

- Adelaide Airport increased landing charges for domestic RPT services by around 22 per cent to $6.00 per tonne (MTOW) in December 2001. Charges for international and regional services were not altered. This represented a weighted average increase in charges of approximately 14 per cent.
- Coolangatta Airport moved from weight-based charges to passenger-based charges in November 2001. A passenger charge of $5.90 is now levied on arriving and departing passengers. This represents an increase of approximately 170 per cent on the estimated equivalent per passenger charge of the previous weight-based charges. (Gold Coast Airport, sub. DR58)
- In October 2001, Canberra Airport increased its per passenger landing charge by 113 per cent to $5.40 per passenger.
- Darwin and Alice Springs airports (both operated by Northern Territory Airports) moved from weight-based landing charges to passenger-based charges in December 2001. A charge of $6.02 per international passenger movement and $4.93 per domestic passenger movement was introduced at Darwin Airport. A $5.48 charge per passenger movement was introduced at Alice Springs Airport. The switch to passenger charges makes comparisons with previous weight-based charges difficult, but the new charges are more than double the previous aeronautical charges at both airports.
- Townsville Airport introduced a 60 cent per passenger charge in December 2001, additional to their existing weight-based landing charges.

As at December 2001, Hobart and Launceston airports had not announced any increases in their charges. A number of airports have indicated that they will review their charges in the first half of 2002 in light of developments in traffic volumes.

International comparisons

User charges at major Australian airports appear to be among the lowest in the world. The Transport Research Laboratory (TRL) compiles an annual index of user charges at 40 major international airports.[17] The index ranks airports on the basis of the composite basket of airport services required to land and turn around an international passenger service, including air traffic control charges, terminal charges, aircraft parking charges and noise levies (figure 2.8). In 2000, Sydney Airport (one of Australia's more expensive airports in terms of international terminal fees, and the only Australian airport included in the study) was ranked as the sixth cheapest in the study (TRL 2000b). The ACCC (2001i) noted in its final decision on the proposed price increases at Sydney Airport that, taking into consideration the approved price increases, user charges would still be below the average charges of those airports surveyed by TRL.

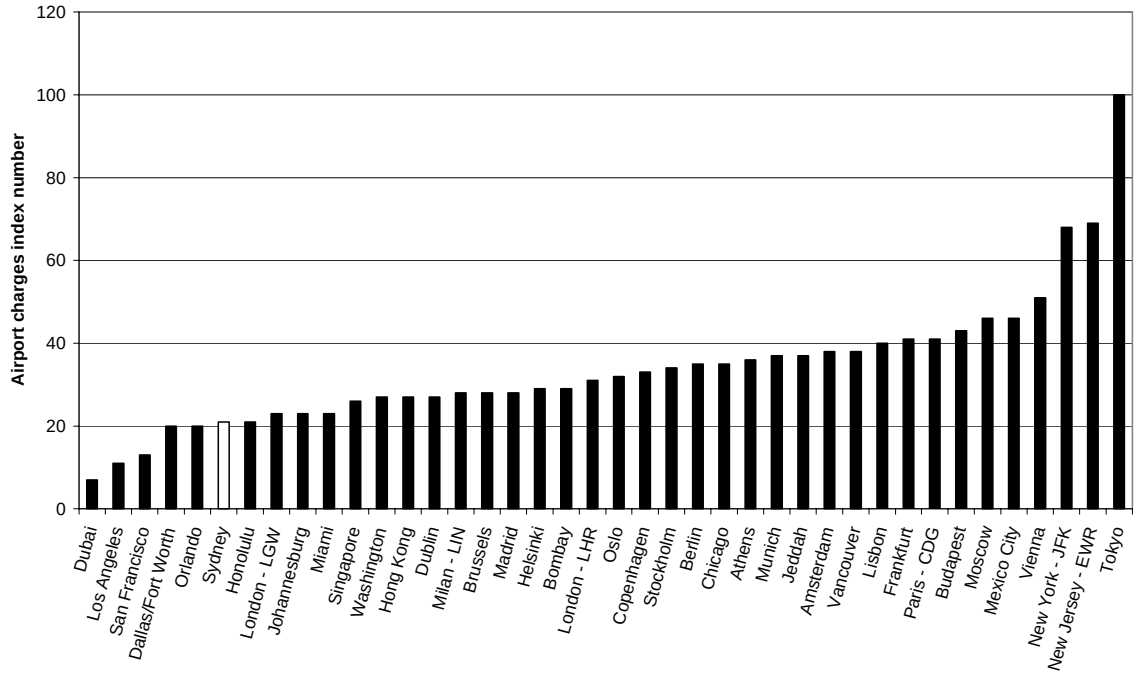
The Board of Airline Representatives of Australia (BARA) commented that the use of the TRL study was of limited assistance as it failed to take into account adequately the differences in the way in which a number of airports charge. In particular, BARA noted that:

- several airports in the sample offer large discounts to frequent users, and/or levy charges which depend on the destination or origin of the aircraft;
- … the impact of different charging policies in relation to transfer passengers is not taken into account; and
- the study excludes taxes, even though at several airports, taxes are used to recover costs in the same way as aeronautical charges in other airports. (sub. DR54, p. 33)

While the study does not account for all differences in pricing policies across airports, it does provide some indication of the level of user charges at Sydney Airport relative to the level of charges at a number of major airports worldwide. Moreover, even if features such as discounts, taxes and transfer passenger charges were taken into account, it would not necessarily result in an increase in Sydney Airport's aeronautical charges relative to the charges levied by other airports in the study. For example, taxes are not levied at Sydney Airport to recover the costs of aeronautical services, and Sydney Airport offers discounts to some airport users.

17 Airports are included in the survey to represent the different approaches to airport pricing in both public and private-sector operating environments. They are not necessarily the 40 largest airports in the world (TRL 2000b).

Figure 2.8 **Airport charges at selected international airports, 2000[a,b]**

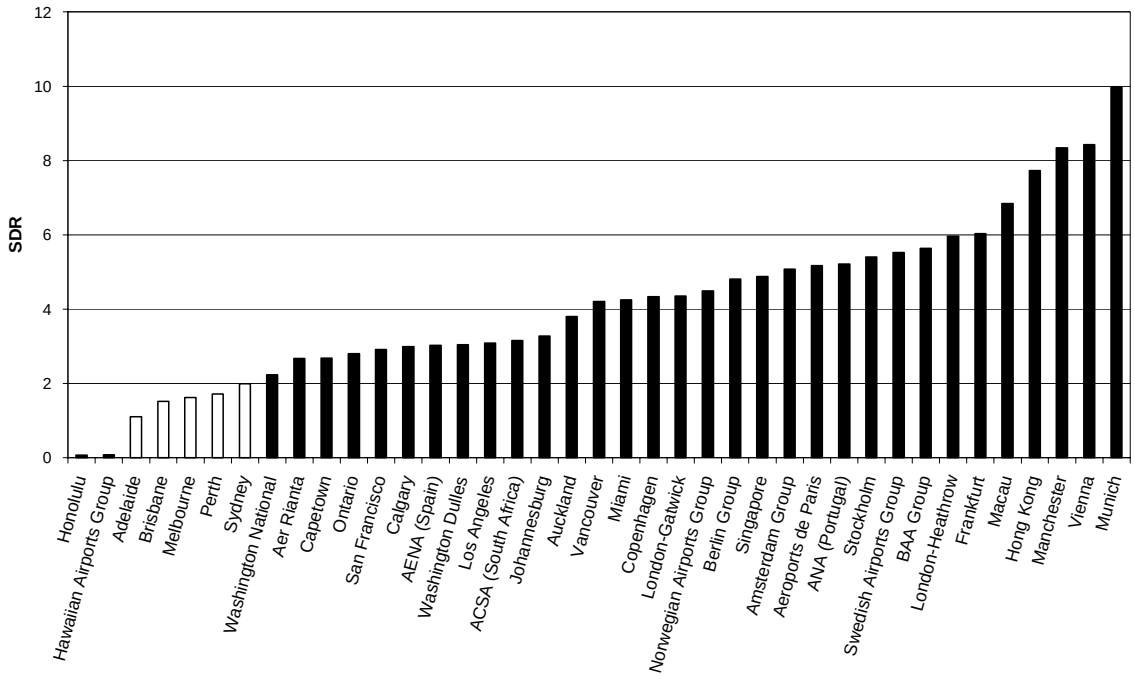


a Based on the charges for a composite basket of airport services required to land and turn around an international passenger service. **b** To derive the airport charges index, airport charges in local currencies are converted to Standard Drawing Rights (SDRs). The SDR is an artificial currency unit calculated using a weighted basket of five national currencies — the US dollar, the German deutschmark, the UK pound, the French franc and the Japanese yen. It reflects actual exchange rates, not purchasing power parity.

Data source: TRL 2000b, *Review of Airport Charges 2000*, Crowthorne, UK.

Another TRL study, reported by the ACCC (2001i), compared 40 major airports and airport groups on the basis of aeronautical revenue per aircraft movement and per passenger. The five Australian airports covered in the survey were ranked among the lowest in the world in terms of revenue per passenger (in the bottom 10 — figure 2.9) and in terms of revenue per aircraft movement (in the bottom 15). The ACCC (2001i) noted that, allowing for the approved increase in charges at Sydney Airport, charges at that airport would remain below the international average for both measures. However, because the bundle of aeronautical services provided by airport operators can differ substantially between airports, the conclusions that can be drawn from these rankings are limited. For example, unlike many overseas airports, the major domestic airlines operate their own domestic terminals under long-term leases at the Australian airports included in the study. In addition, a small number of airports included in the study (such as Frankfurt and Munich) earn aeronautical revenue through the provision of ground-handling services, which tend to be provided by airlines or specialist providers at other airports.

Figure 2.9 **Aeronautical revenue per passenger at selected international airports, 2000[a,b]**



a Based on total passenger movements (international, domestic and, where applicable, regional). **b** The SDR is an artificial currency unit calculated using a weighted basket of five national currencies — the US dollar, the German deutschmark, the UK pound, the French franc and the Japanese yen. It reflects actual exchange rates, not purchasing power parity. **SDR** Standard Drawing Right.

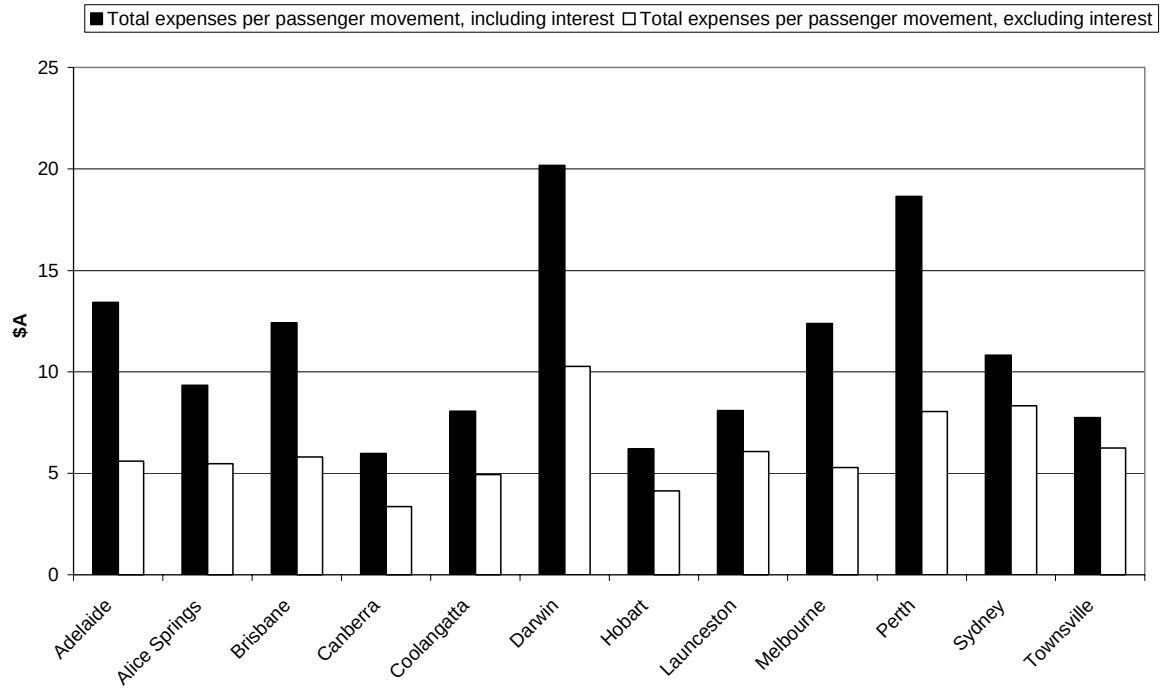
Data source: TRL 2000a, *Airport Performance Indicators 2000*, Crowthorne, UK.

Airport expenditure

Australia's core-regulated airport operators incurred total expenses of approximately $810 million in 1999-00 (including interest and depreciation). The level of expenses varied across Australian airports, with Sydney, Melbourne and Brisbane airports accounting for over 70 per cent of the total (ACCC 2001b–f).

In terms of expenses per passenger movement, there are significant variations across airports (figure 2.10). Differences in average expenses are influenced by a number of factors, including airport size (reflecting possible economies of scale), the composition of airport traffic (for example, airports servicing international traffic tend to incur higher costs than purely domestic airports), and genuine efficiency differences. The extent to which differences may indicate economies of scale is discussed in chapter 5.

Figure 2.10 **Expenses per passenger movement at core-regulated airports, 1999-00**

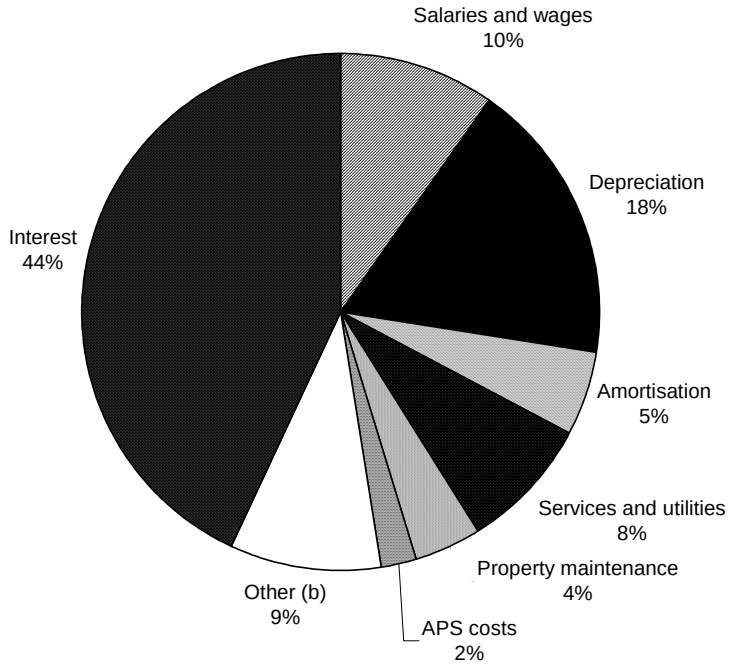


Data sources: ACCC (2001b–d); DoTRS (unpublished).

Cost structures by expense category

On average, capital costs (defined as depreciation plus interest expense) is the main expense category for Australian core-regulated airport operators (figure 2.11). However, given that financing structures (equity and loans) vary significantly between airports and, in some instances, the distinction appears to be rather arbitrary, the figure for the interest category is of limited value. Salaries and wages also tend to be significant on average, although they are a much smaller component of total costs than interest and depreciation. This in part reflects the fact that labour-intensive components of airport services do not tend to be provided directly by core-regulated airports. Land also is an important component of their operations but the classification of expenses in the regulatory accounts does not provide consistent and separate measures of the land expenses incurred. The value that should be placed on land is contentious (appendix F).

Figure 2.11 **Expenses of core-regulated airports, by category, 1999-00[a]**



a Expense categories used are those contained in the ACCC regulatory reports.**b** 'Other' includes the 'other' category contained in the ACCC regulatory reports plus consultants and advisers, general administration and leasing for Adelaide Airport; passenger screening for Alice Springs and Darwin airports; and passenger and checked-baggage screening for Perth Airport. **APS** Australian Protective Services.

Data sources: ACCC (2001b–d).

In broad terms, the cost pattern illustrated in figure 2.11 is indicative of the situation at individual airports. However, there is (sometimes significant) variation across airports. For instance:

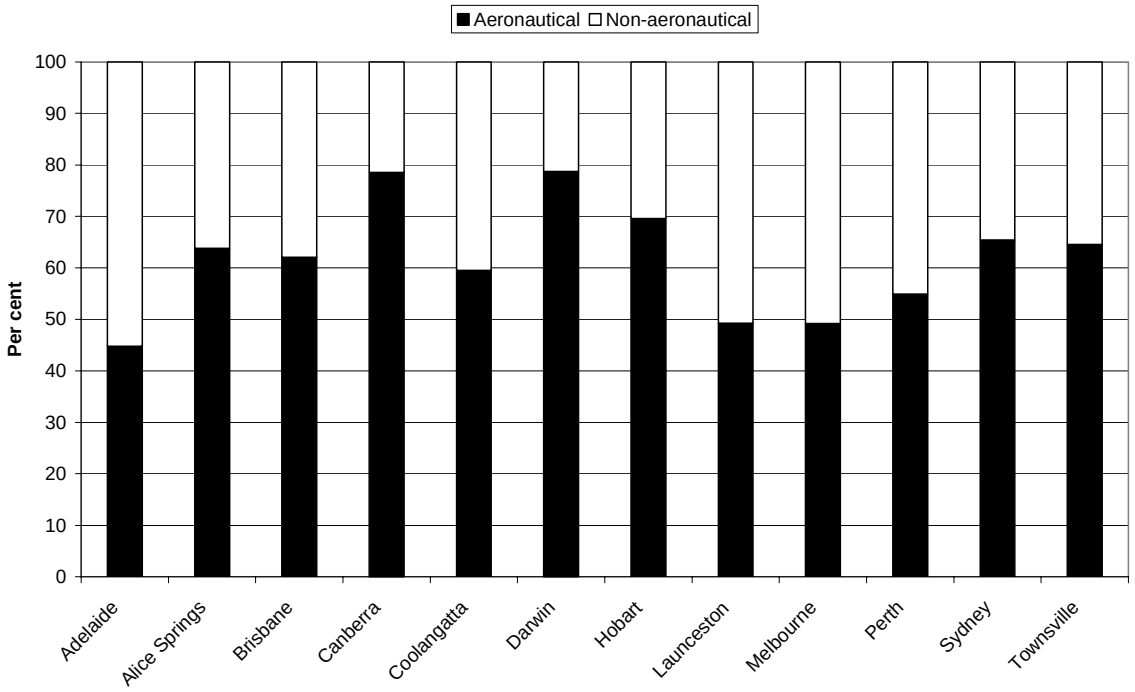
- labour costs tend to be a more significant proportion of costs at smaller airports than they are at the larger ones; and
- not all expense categories are relevant to all airports. For example in 1999-00, only seven of the 12 core-regulated airports incurred Australian Protective Services expenses and only eight included amortisation expenses.

Cost structures by aeronautical and non-aeronautical sources

Aeronautical expenditure tends to comprise the bulk of Australian airport operator's expenses (figure 2.12), accounting for 60 per cent of total expenses on average in

1999-00.[18] Non-aeronautical expenditure exceeded aeronautical expenditure at three airports only in 1999-00 — Adelaide, Launceston and Melbourne.

Figure 2.12 **Aeronautical and non-aeronautical expenses of core-regulated airports, 1999-00[a]**



a Classification of expenses as aeronautical and non-aeronautical is based on ACCC regulatory reports. Total costs exclude costs that have not been classified as either aeronautical or non-aeronautical.

Data sources: ACCC (2001b–d).

The high proportion of aeronautical expenses possibly reflects the fact that airport operators are more likely to be directly involved in operations on the aeronautical side than the non-aeronautical side of the business, where they typically act as landlords. The relatively low proportion of aeronautical expenditure for Adelaide Airport is affected by its use of contractors to provide many of its day-to-day operations. This is because contracting expenses at Adelaide Airport are recorded as non-aeronautical expenses in the regulatory accounts even though some contracted labour is used to provide aeronautical services.[19]

The data presented here rely on information provided in the ACCC regulatory reports by the airports. Thus, measured differences across airports also are likely to

18 Total expenses in this case exclude interest and other expenses that have not been classified as either aeronautical or non-aeronautical in the ACCC regulatory reports.

19 Adelaide Airport contracts out its day-to-day operations to Serco Australia, which provides the staff required for these operations (AAL 2000).

be influenced by different accounting and cost allocation methods. According to WAC:

> Regulated airports lodge annual accounts with the ACCC, and while the form of the final published accounts is consistent between airports, there is no way of determining whether each airport has applied the same methodology in reporting aeronautical and non-aeronautical costs. WAC understands that each airport employs different cost accounting tools to achieve the split. (sub. 21, p. 25)

Investment expenditure

Airport operators invest to increase capacity and/or to maintain or improve the quality of service (see box 2.2, for examples of airport investment). Overall investment levels for airports vary depending on the size and nature of the airport, the extent of previous investment in the airport and, for the privatised airports in Australia, the amount of investment required under their lease agreements (chapter 3).

Box 2.2 Examples of investment by Australian airport operators since privatisation

- At Melbourne Airport, approximately $100 million was invested in capital projects in the first three years following privatisation (around 75 per cent of which related to terminal facilities), in addition to $130 million invested by its business partners. Around $100 million is expected to spent by Melbourne Airport on a range of projects in 2000-01 and 2001-02, including an expansion of aircraft parking areas, domestic and international terminal infrastructure projects, retail and car-parking projects, and cargo facilities. (Melbourne Airport, sub. 7, appendix 1)
- At Mount Isa Airport, approximately $1.45 million was invested in the two years after 11 June 1998, with investments relating to the erection of fencing to protect the airfield from animal hazards, the treatment of airport pavements and a terminal upgrade. (Australian Airports (Townsville), sub. 14)
- At Perth Airport, $6.1 million of capital investment in aeronautical infrastructure in three and a half years of private ownership. (WAC, sub. 21)
- At Canberra Airport, over $35 million of capital expenditure has been made since privatisation, with a further $100 million planned in the next five years. (Capital Airport Group, sub. 32)

Information provided by participants shows that total investment by airport operators at individual airports since privatisation has ranged from several hundred

thousand dollars per year to over $30 million per year,[20] with further investment planned. Terminal upgrades, apron and runway enhancements, the erection of fencing and retail development are among the types of investment already undertaken or planned for the next few years.

Productivity

There have been few recent studies on the productivity of core-regulated airports. One recent study, by Abbott and Wu (2001) measured the (total factor) productivity growth[21] of core-regulated airports over the period 1990-91 to 1999-00 and benchmarked these airports against a selection of international airports using data envelopment analysis. Over the period of the study, core-regulated airports improved their performance in terms of total factor productivity, with productivity growth averaging 7.7 per cent per year, well above that of the rest of the economy (which had an average growth rate of 1.36 per cent per year) (Abbott and Wu 2001, p. 17). The high growth rates in productivity were driven by rapid technological change, particularly over the period 1990-91 to 1994-95. Abbott and Wu (2001) suggested that improvements came in the form of the introduction of more advanced computer and air traffic systems, which allowed for the accommodation of greater traffic flows through the airports. This process helped the airports to overcome delays and accommodate an expansion of output without the construction of new and enlarged terminals and runways.

Abbott and Wu (2001) also examined the productivity performance of the 12 Australian airports against a number of overseas airports including two British, two Canadian, three New Zealand and five US airports for the year 1998-99. When rated against overseas airports, Australia's largest airports 'rate fairly well in terms of their levels of efficiency' (Abbott and Wu 2001, p. 27).

Profitability

In 1999-00, the operators of all privatised core-regulated airports earned profits and positive returns on non-current tangible assets. However, with the exception of the operators of Townsville Airport, all operators reported a loss after interest and tax (table 2.3). All Phase 1 airports are highly geared (ACCC, sub. 36, attachment A)

[20] This does not include Sydney Airport, where SACL (sub. 27) invested in excess of $800 million over two years leading up to the 2000 Olympics.

[21] Productivity refers to the relationship between inputs and outputs. Productivity growth implies an increase in the ratio of outputs to inputs. Total factor productivity is a measure of overall productivity, capturing all sources of productivity.

and, in general, high interest payments at all privatised core-regulated airports have been an important factor contributing to the low returns. Sydney Airport is less highly geared than other core-regulated airports (although it has substantial borrowings) and was able to generate sufficient operating profit to cover interest payments and generate net profits — approximately $43 million in 1999-00.

Table 2.3 **Selected financial results for core-regulated airports, 1999-00**

	Operating profits[a]	*Operating return*[b]	*Profit/(loss) after interest and tax*
	$m	%	$m
Adelaide	29.541	14.0	(7.131)
Alice Springs	0.417	1.7	(2.692)
Brisbane	68.274	8.0	(112.650)
Canberra	4.030	4.8	(2.196)
Coolangatta	3.243	10.6	(2.009)
Darwin	1.054	1.6	(10.130)
Hobart	2.082	17.1	(0.216)
Launceston	1.264	6.0	(0.188)
Melbourne	94.154	13.0	(20.290)
Perth	37.652	18.2	(22.398)
Sydney	120.159	3.9[c]	42.842
Townsville	1.543	10.9	0.117

[a] Before abnormal items, interest, tax and amortisation. [b] On tangible non-current assets. [c] Based on earnings before interest and tax (EBIT) on tangible non-current assets.

Source: ACCC (sub. 36, attachment A).

The ACCC regulatory accounts (ACCC 2001b–f) indicate that the non-aeronautical segment of the airport business is much more profitable than the aeronautical business. In 1999-00, non-aeronautical businesses generated high operating profit margins at nearly all core-regulated airports, while aeronautical businesses mostly made small profits or had losses — around half of the core-regulated airports made a loss on the aeronautical side of their businesses in 1999-00 (tables 2.4 and 2.5).

Table 2.4 **Financial indicators for aeronautical and non-aeronautical business segments at Phase 1 and Sydney airports, 1999-00**

Airport	*Revenue*	*Costs*	*Operating profit*[a]	*Operating return*[b]
	$m	$m	$m	%
Brisbane				
Aeronautical	38.211	38.016	0.195	0.0
Non-aeronautical	91.320	23.241	68.079	21.0
Melbourne				
Aeronautical	55.160	39.277	15.883	3.7
Non-aeronautical	111.823	33.700	78.123	26.5
Perth				
Aeronautical	20.471	17.595	2.876	3.1
Non-aeronautical	49.207	14.431	34.776	32.5
Sydney				
Aeronautical	120.052	126.003	(5.951)	(0.4)
Non-aeronautical	190.001	66.540	123.461[c]	8.2

[a] Before abnormal items, interest, tax and amortisation. [b] On tangible non-current assets. [c] Approximately $3 million of Sydney Airport's revenue has not been allocated between aeronautical and non-aeronautical sources.

Source: ACCC (sub. 36, attachment A).

As noted previously, the disaggregation of costs and assets into aeronautical and non-aeronautical components is determined by airport operators' interpretation of the regulatory guidelines. Consequently, there may be some variation in how costs and assets are allocated across core-regulated airports. Even allowing for variation in the disaggregation of costs and assets, it seems likely that returns from non-aeronautical businesses are greater than those from aeronautical businesses at core-regulated airports. As KPMG observed:

> On the assumption that revenue allocations are fairly stated and not at risk of significant subjectivity, the cost and/or asset allocations disclosed in the regulatory accounts would need to be materially misstated to change the view that aeronautical returns are less than non-aeronautical returns. (ACCC, sub. 36, attachment A, p. 6)

Table 2.5 **Financial indicators for aeronautical and non-aeronautical business segments at Phase 2 airports, 1999-00**

Airport	*Revenue*	*Costs*	*Operating profit*[a]
	$m	$m	$m
Adelaide			
Aeronautical	9.867	8.681	1.186
Non-aeronautical	39.442	11.087	28.355
Alice Springs			
Aeronautical	1.812	2.724	(0.912)
Non-aeronautical	2.795	1.466	1.329
Canberra			
Aeronautical	4.372	5.178	(0.806)
Non-aeronautical	6.255	1.419	4.836
Coolangatta			
Aeronautical	5.804	5.447	0.357
Non-aeronautical	3.593	3.703	na
Darwin			
Aeronautical	5.334	8.357	(3.023)
Non-aeronautical	6.341	2.264	4.077
Hobart			
Aeronautical	3.311	2.375	0.936
Non-aeronautical	2.184	1.038	1.146
Launceston			
Aeronautical	1.525	1.617	(0.092)
Non-aeronautical	2.914	1.558	1.356
Townsville			
Aeronautical	2.188	2.747	(0.559)
Non-aeronautical	3.611	1.509	2.102

[a] Before abnormal items, interest, tax and amortisation. **na** Not available, due to non-allocated revenues.

Sources: ACCC (2001b–f; sub. 36, attachment A).

2.4 The airport business at other Australian airports

Cairns Airport is Australia's largest non-core-regulated airport (and, overall, is Australia's sixth largest in terms of total passenger movements, and fifth largest for international passengers). In 1999-00, Cairns Airport's operating revenue was approximately $41.5 million. Cairns Airport is owned and operated by the Cairns Port Authority, which assumed control of the airport in 1981 under the Aerodrome Local Ownership Plan (ALOP).[22]

22 A Commonwealth Government program where ownership and responsibility for around 230 Commonwealth airports was transferred to local councils.

The organisational structure for the provision of services at Cairns Airport is different from that at core-regulated airports. Unlike the situation at core-regulated airports, at Cairns Airport the major domestic airlines do not hold exclusive leases for their own domestic terminals, and are required to pay a user charge based on passenger numbers. The difference in charging structures — whereby revenue from domestic terminals at Cairns Airport is included in aeronautical revenue, while core-regulated airport revenue from the domestic airlines' terminals is classified as property income — is reflected in the relatively high proportion of 'aeronautical revenue' at Cairns Airport, which was around 55 per cent of total airport revenue in 1999-00 (CPA 2000).[23]

Of the remaining non-core-regulated airports that receive RPT services, some are privately owned (for example, Hamilton Island and Mount Isa). However, most are owned and operated by local councils which, in most cases, assumed the running of the airports under the ALOP.

While there is little publicly-available information on the user charges levied on RPT at regional airports, anecdotal information suggests there is significant variation in user charges across these airports. This may reflect the fact that most of these airports are not managed as separate business entities, but as a component of the councils' overall activities (chapter 5).

[23] Refers to revenue directly related to the aircraft operations, and comprises charges on aircraft (33 per cent) and charges on goods and passengers (22 per cent).

3 The regulatory environment

In 1997 and 1998 the Commonwealth Government negotiated long-term leases for 22 Commonwealth-owned airports, with 17 being privatised (chapter 1). The objectives were to:

> … improve the efficiency of airport investment and operations in the interests of users and the general community, and to facilitate innovative management. (Harris 1997, p. 2)

Many of these airports are subject to a comprehensive Commonwealth regulatory framework, major economic components of which are the *Airports Act 1996* and *Trade Practices Act 1974* (TP Act), and price regulation under the *Prices Surveillance Act 1983* (PS Act). They are also subject to State and Territory regulations and international agreements, which directly or indirectly affect the operation of airports, and ultimately the prices that airports charge for services.

This chapter describes the regulatory environment affecting the operation of these and other airports in Australia. It also describes the changes to prices oversight arrangements for several airports, as announced by the Commonwealth Government in October 2001.

Where relevant, the terms and conditions of lease and sale agreements are also described. Although the inquiry's terms of reference embrace all airports, this chapter focuses on the regulation, particularly price regulation and access arrangements, of airports leased from the Commonwealth given their importance and the emphasis in the terms of reference.

Chapters 8 and 9 assess price regulation for the period from the granting of leases against the criteria for efficient regulation, and weigh the costs and benefits of the regulation. Chapter 9 also examines the effect of other regulations, such as s. 192 of the Airports Act.

3.1 Price regulation until October 2001

This section describes prices oversight arrangements for the period from the granting of leases for Phase 1 and 2 airports until October 2001 when prices

oversight arrangements were changed for most airports. Section 3.2 describes the regulatory changes announced in October 2001.

Prices oversight arrangements, introduced when Phase 1 and 2 airport leases were sold, were designed to complement the objectives (see above) of leasing the Commonwealth-owned airports.

According to a Commonwealth Department of Transport and Regional Development (DoTRD)[1] Pricing Policy Paper provided to potential airport lessees as part of their obligations if they were successful bidders, prices oversight arrangements were intended to:

> … promote operation of the airports in as an efficient and commercial a manner as possible. Pricing is fundamental to the efficient use of airport infrastructure. It is in the interests of airport users in particular, and the national economy in general, that commercially-driven decisions be made about maintaining existing airport infrastructure, and building new infrastructure. (DoTRD 1996, p. 1)

Another objective was the protection of airport users. The paper noted that 'the arrangements should also aim to protect airport users from any potential abuse of market power by airport operators' (DoTRD 1996, p. 1).

Finally, the Government intended to encourage more direct commercial relationships between airport operators and their customers. The paper stated:

> It is the Government's intention to step back from setting prices at individual, privately-leased airports; and to provide a framework in which — over time — airport operators and their customers are encouraged to negotiate directly, and resolve prices rather than involve the Government of the day. (DoTRD 1996, p. 1).

In early 2001, these objectives were re-stated by the Minister for Transport and Regional Services in correspondence with the ACCC. The Minister also noted that implicit in the prices oversight arrangements:

> … was that regulatory intervention would only occur where it was apparent that airport behaviour was adversely impacting on consumers or competition between airlines through the exercise of a real or perceived monopoly power. (Anderson 2001b, p. 1)

The Commonwealth Government at the time of leasing the airports recognised that a period of adjustment to prices oversight might be necessary in the new regulatory environment. The first five years were therefore viewed as a transition period, with a review of prices oversight arrangements to be completed prior to the end of this period (chapter 1).

1 Now the Department of Transport and Regional Services (DoTRS).

Twelve of the 22 airports were designated as 'core-regulated' airports under the Airports Act and were subject to price regulation under the PS Act. The core-regulated airports comprise 11 privatised airports and Sydney Kingsford Smith Airport (Sydney Airport), which is to be sold in early 2002. Privatised core-regulated airports were those airports with significant 'regular public transport' (RPT) and included the three Phase 1 airports (Brisbane, Melbourne and Perth) and eight of the Phase 2 airports (Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston and Townsville).[2]

In essence, price regulation of the Phase 1 and 2 airports, in the period from the sale of leases until October 2001, comprised:

- prices notification for aeronautical services;
- a CPI-X price cap on aeronautical services at privatised core-regulated airports;
- price monitoring of aeronautical-related services; and
- provisions for necessary new investment (NNI) at airports.[3]

These arrangements were administered by the ACCC under the PS Act. In carrying out its functions, the ACCC was to have regard to the following, among other factors:

> (a) the need to maintain investment and employment, including the influence of profitability on investment and employment; [and]
>
> (b) the need to discourage a person who is in a position substantially to influence a market for goods or services from taking advantage of that power in setting prices. (PS Act, s. 17(3))

Price regulation of airport services until October 2001

A range of services provided by core-regulated airports, including Sydney, was subject to prices notification or monitoring under the PS Act for the period following the granting of leases until October 2001 (box 3.1). The basket of aeronautical services — as defined in the now rescinded *Federal Airports Corporation Act 1986* — to which prices notification applied remained unchanged from when the Federal Airports Corporation (FAC) operated airports.

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2 The regulatory environment for airports leased from the Commonwealth and not subject to price regulation is described in section 3.4. These airports were: Mount Isa, Tennant Creek, Archerfield, Jandakot, Moorabbin, Parafield, three Sydney basin airports (Bankstown, Camden and Hoxton Park) and Essendon.

3 All of these regulations, except price caps, also applied to Sydney Airport.

Box 3.1 **Regulation of facilities and activities**

Aeronautical services (those notified for the purposes of s. 21(1) of the PS Act)[4] at all core-regulated airports, including Sydney Airport, were grouped in two main categories: aircraft movement facilities and activities, and passenger processing facilities and activities.

Aircraft movement facilities and activities comprised: airside grounds, runways, taxiways and aprons; airfield lighting, airside roads and airside lighting; airside safety; nose-in guidance; aircraft parking areas; and visual navigation aids.

Passenger processing facilities and activities included: forward airline support area services; aerobridges and airside buses; departure lounges; immigration and customs services areas; public address systems and closed circuit surveillance systems; baggage make-up, handling and reclaim; public areas in terminals; flight information display systems; landside road and lighting; and covered walkways.

Some aeronautical-related services provided by airport operators were not subject to notification but were subject to price monitoring under s. 27A of the PS Act.[5] These were: aircraft refuelling; aircraft maintenance sites and buildings; freight equipment storage sites; freight facility sites and buildings; ground support equipment sites; check-in counters and related facilities; and public and staff car parks.

Not all services provided by airport operators were subject to prices oversight. For example, there was no prices oversight of airport operators' revenue from rents or leases for retail shops and cafes, administration and office space, catering facilities, valet parking services and VIP lounges.

Moreover, airport operators did not have responsibility for all aeronautical services provided at airports. Aeronautical services outside airport operators' areas of responsibility included: en-route navigation and terminal navigation (air traffic control and airspace management); aeronautical information; communications; and firefighting and rescue services.

Sources: Prices Surveillance Act 1983; ACCC (2000a).

Services and facilities provided by domestic terminals that were leased for the long-term to airlines were not subject to price regulation. However, domestic common-user terminals and international terminals were covered by price regulation.

4 Declaration No. 87, June 2000, covered Brisbane, Melbourne and Perth airports, Declaration No. 88, June 2000 (Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, Hobart, Launceston and Townsville airports), and Declaration No. 89, June 2000 (Sydney Airport). These Declarations replaced previous Declarations.

5 Declaration Nos 87, 88 and 89. The Minister for Financial Services and Regulation (pursuant to s. 27A of the PS Act) directed the ACCC to undertake formal monitoring of prices, costs and profits related to the supply of specified aeronautical-related services at all core-regulated airports (Direction No. 21, October 2000, replacing previous Directions).

Aeronautical services were subject to prices notification under the PS Act. This required specified companies to notify the ACCC of all proposed price increases for these services. Financial penalties applied for failure to notify price increases. The ACCC was required to make a determination about the notified price increase within 21 days unless the company agreed to an extension. Although any such determinations were not enforceable, failure to comply could, under the PS Act, trigger a public inquiry (upon direction by the Minister) and the freezing of charges. Moreover, the Commonwealth Government reserved the right to consider advice from the ACCC regarding the need for stronger regulation (DoTRD 1996).

The Ministerial direction under the PS Act required the ACCC to monitor and report publicly on prices of aeronautical-related services and their relationship to costs. The ACCC could make no determination, but it could recommend whether more or less rigorous prices oversight of aeronautical-related services was needed.

Price-cap arrangements

Aeronautical services were subject to an annual CPI-X price cap at all core-regulated airports, except Sydney Airport, for a five-year period following privatisation (pursuant to s. 20 of the PS Act). Direction No. 20, by the Minister for Financial Services and Regulation, described the price-cap arrangements.[6]

Aeronautical-related services and non-aeronautical services were excluded from the price cap (box 3.1). Only revenue from those services within the cap was taken into account in assessing airport operator compliance with the cap — a so-called 'dual-till' approach to price regulation.

The ACCC administered the price-cap arrangements. It assessed any individual notified price increases (as mentioned above), focussing on whether they were likely to comply with the price cap, and also undertook a formal annual assessment of each airport operator's compliance with the price cap. Although compliance with the overall price cap was not directly enforceable, non-compliance might have resulted in a response from the ACCC similar to that for individual notified price increases.

Airport operators were required to provide the ACCC with sufficient information to enable these assessments to be made. For individual price notifications, this included information on initial and new prices and previous years revenue shares of the relevant component. Information to enable an assessment of price-cap compliance included revenue from each of the charging components for the year of

6 Direction No. 20, October 2000, replaced Direction No. 17, and previously, Direction No. 13.

assessment and the previous year, and volume and output for each component (ACCC 1997a).

CPI-X

The CPI measure for the price cap was the Treasury Underlying Rate of Consumer Price Inflation. Each airport's X value was set by the Commonwealth Government, on advice from the ACCC, and 'reflects expected productivity improvements that the Government considers can be made in the provision of aeronautical services at each airport' (Direction No. 12, June 1997, p. 1). The X values varied substantially between airports, ranging from 1 per cent for Canberra and Townsville airports to 5.5 per cent for Perth Airport (table 3.1). The starting prices for the price cap were the FAC prices at the time of privatisation — shortly before privatisation (in January 1997), the FAC increased charges for the use of terminals at Sydney, Melbourne, Brisbane, Adelaide and Perth airports by varying amounts for each airport.

Table 3.1 **X values applying in each year of the price cap at core-regulated airports**

Airport	*X values (%)*
Adelaide	4.0
Alice Springs	3.0
Brisbane	4.5
Canberra	1.0
Coolangatta	4.5
Darwin	3.0
Hobart	3.0
Launceston	2.5
Melbourne	4.0
Perth	5.5
Townsville	1.0

Sources: Direction No. 12, June 1997; Direction No. 13, May 1998.

The formula

The price-cap formula measured annual changes in the prices of the aeronautical services for each airport. It was a modified revenue-weighted average price. The formula took the percentage change in price of each charging component (for example, landing charges), weighted this by the revenue share in the previous

period, and then summed over all components.[7] This was referred to as the 'tariff basket' approach (chapter 10).

Under-recovery and over-recovery

According to the DoTRD Pricing Policy Paper, the ACCC would not object to price changes unless they breached the price cap. Airport operators therefore could continue to 'rebalance' charges within their airport's overall price cap (DoTRD 1996).

Under-recoveries, where prices were below the cap in a particular year, could be carried over between years within the five-year price-cap period. Over-recoveries, where prices exceeded the price cap, were to be passed back to customers within two years from the period of over-recovery (except in the case of year 4, where it was to be passed back fully in year 5).

New or varied charges

New or varied charges on existing aeronautical services, and charges on new or varied services, were factored into the price cap. Compensating reductions in other charges could be required to ensure compliance with the cap. In the case of new charges (such as vehicle access charges at Perth Airport), in the transition year, revenue from the new charge was allocated to other charging components (for example, landing charges) in proportion to their previous period revenue share (ACCC 2001d).

Cost pass-through

Under Direction No. 20, the ACCC was to allow 100 per cent pass-through in the price cap of mandated security requirements and congestion charges employed as part of an airport demand management scheme under the Airports Act (described in section 3.3). Pass-through provisions also existed for NNI.

Necessary new investment

The price-cap arrangements allowed airport operators to seek ACCC approval for charges in excess of the price cap, to recoup costs associated with NNI.

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7 For more information on the price cap formula, see Direction No. 20, October 2000, and ACCC (1997a).

The DoTRD Pricing Policy Paper explained:

> While price caps on aeronautical charges are directed towards ensuring that there is no abuse of the potential market power of the airport operators, price oversight arrangements dependent solely on these price caps may restrict the timely development of necessary new aeronautical infrastructure.
>
> As a result, some flexibility is afforded airport operators to rebalance charges **outside** the price cap. In particular, operators need sufficient incentive to invest in new infrastructure, and the ability to meet the costs of necessary new investment. (DoTRD 1996, p. 4)

The operator could seek to recoup these costs where price rises were required to fund the new investment and 'users with a significant interest in the new investment support the investment, including the associated charges' (DoTRD 1996, p. 4).

ACCC assessments of proposals by airport operators to increase charges to recover the costs of investment were undertaken in the context of specified guidelines (box 3.2).[8] The price-cap arrangements did not define the term 'necessary new investment'. Moreover, according to the ACCC, although an amount of investment was factored into the X value for each airport, specific investments were not detailed (ACCC 2000b). In this regard the Department of Transport and Regional Services (DoTRS) stated:

> There is no mandated or required level of capex [capital expenditure] related to the revenue airports receive under the pricing cap, thus no basis for revisiting which investments are paid for and which are not. The slate must be considered clean, or else every other element used in setting the price cap will become equally open to debate. (DoTRS letter to Ansett, 30 April 1999, p. 2, cited in ACCC 2000b)

Following industry consultation, the ACCC, as administrator of the price cap and assessor of NNI proposals, defined the words 'necessary', 'new' and 'investment' to be able to distinguish between NNI and other forms of airport expenditure (ACCC 2000b). For example, the ACCC assessed several projects proposed by Perth Airport and decided that some projects did not fall within its definition of new investment (ACCC 2000c).

The ACCC's implementation of the NNI provisions of the price-cap arrangements is discussed in chapter 8.

8 These guidelines are set out in the DoTRD (1996) Pricing Policy Paper, and replicated in Direction No. 20, October 2000.

Box 3.2 **Guidelines for the assessment of proposals for price increases related to necessary new investment**

These criteria will, where relevant for its purposes, guide the ACCC in its assessment of proposals related to necessary new investment to increase aeronautical charges at a rate in excess of the CPI-X cap:

(a) the operator's plans for new investment or service innovation and the associated costs;

(b) the relationship between the proposed increases in aeronautical charges and the costs (including the level of rate of return) of the new investment or service;

(c) support from airport users with a significant interest in the investment for the operator's proposals, including in relation to charging changes;

(d) contribution of the new investment/service to productivity improvements at the airport;

(e) overall efficiency of the airport's operation;

(f) the particular demand management characteristics of individual airports, including any demand management schemes in place, capacity constraints and any underutilisation of airport infrastructure;

(g) airport performance against quality of service measures, including services under the control of the airport operator;

(h) airport performance vis á vis other Australian airports and any comparable international airports; and

(i) the extent to which the proposed investment will facilitate the operations of new entrants to domestic or international aviation.

While the ACCC must take the above into account in deciding whether to approve a proposal to increase charges outside the cap, each proposal will be considered on its merits having regard to the information available to the ACCC. The weight provided by the ACCC to each of the criteria (a) to (i) may vary on a case by case basis.

Consistent with the provisions of the *Prices Surveillance Act 1983*, where the ACCC does not approve a proposal to increase charges outside the price cap, it will provide a statement of reasons for its determination. (DoTRD 1996, attachment B)

These guidelines were incorporated in Government directions to the ACCC under the PS Act.

Sydney Airport

Price regulation for Sydney Airport, which was leased but not privatised in 1997, differed in some respects from that of other core-regulated airports. Aeronautical services at Sydney Airport were subject to prices notification under the PS Act but a

price cap did not apply to those services. Aeronautical-related services were subject to price monitoring.[9]

Because Sydney Airport was not subject to the price-cap arrangements set out in Direction No. 20, the NNI provisions of this Direction did not apply. However, Direction (No. 18) provided for Sydney Airport to seek an increase in charges for aeronautical services to cover NNI.[10] The criteria used by the ACCC in assessing Sydney Airport proposals were the same as those for the core-regulated airports subject to a price cap (box 3.2).

Quality of service monitoring at Sydney Airport took place under the Airports Act. Moreover, the Minister for Financial Services and Regulation directed the ACCC (Direction No. 18) to take account of quality of service information obtained from Sydney Airport in considering notifications to increase prices for aeronautical services.

The Minister also directed the ACCC to give consideration to the following when considering price notifications for Sydney Airport (in effect, a dual-till approach):

> In assessing prices for aeronautical services, the Commission should not take into account the revenues generated, or costs incurred, in the provision of services other than aeronautical services. (Direction No. 22)

3.2 Price regulation since October 2001

As noted above, the Commonwealth Government changed prices oversight arrangements at core-regulated airports in October 2001. In so doing, the Government commented that:

> Some airports have indicated that they are facing financial pressures as a result of the suspension of Ansett's operations and reduced global demand for aviation services …
>
> The Government accepts that it would be difficult for airports to adjust aeronautical prices to compensate for reduced traffic flows, and still comply with the current price oversight arrangements administered by the ACCC. (Hockey 2001)

The changes, pursuant to s. 20 of the PS Act, were as follows.

- Melbourne, Brisbane and Perth airports were allowed a once-only price increase, as a pass-through in the price cap, of up to 6.2, 6.7 and 7.2 per cent of starting

9 Declaration No. 89, June 2000.

10 Direction No. 18, June 2000. Replaced Direction No. 15.

point prices at privatisation respectively.[11] The basis of calculation underlying these price increases has not been made public. In all other respects, price regulation at these airports remained unchanged; aeronautical services continued to be subject to prices notification with price caps.[12] Airport prices notification arrangements, the basket of aeronautical services and price-cap arrangements, including the X values and NNI provisions, remained unchanged from those described in section 3.1.

Also unchanged for Melbourne, Brisbane and Perth airports were price monitoring arrangements for aeronautical-related services.[13]

These airports remain subject to all of the requirements of core-regulated airports under the Airports Act, such as s.192 and quality of service monitoring (sections 3.3 and 3.4). They also must comply with Commonwealth, State and Territory regulation, sale and lease agreements, and international agreements described in section 3.5.

- Price caps on aeronautical services at Adelaide, Canberra and Darwin airports were replaced by price monitoring of those services under the PS Act.[14] Aeronautical-related services which were subject to price monitoring prior to October 2001 (section 3.1), continue to be monitored.[15]

  As with Melbourne, Brisbane and Perth airports, these airports must continue to comply with all of the regulatory requirements of core-regulated airports described in section 3.5, including the Airports Act.

- Coolangatta, Alice Springs, Hobart, Launceston and Townsville airports are no longer subject to any *price* regulation — that is, both the price caps and price monitoring have been removed.[16] These airports remain, however, designated as core-regulated airports and therefore must comply with all of the relevant regulatory requirements described in section 3.5, including the Airports Act.

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11 Direction No. 24, October 2001. Replaced Direction No. 20. According to the Direction, starting point prices are the 'Federal Airports Corporation prices introduced on 1 January 1997, as adjusted in accordance with the price cap arrangements applying since that time, and accounting for under-recoveries or over-recoveries under those price cap arrangements'. The ACCC has interpreted this to mean starting point prices at 1 January 1997 with no allowance for adjustments under the price caps. The ACCC (2001k) has treated the price increases as GST inclusive.

12 Direction No. 24, October 2001. Replaced Direction No. 20.

13 Direction No. 25, October 2001. Replaced Direction No. 21.

14 Direction No. 26, October 2001. Replaced Direction No. 21.

15 Direction No. 26, October 2001. Replaced Direction No. 21.

16 Revocation No. 28, October 2001.

- No changes were made to price regulation at Sydney Airport.[17] Sydney Airport remains subject to prices notification of aeronautical services and price monitoring of aeronautical-related services (section 3.1). Other regulations, outlined in section 3.5, continue to apply.

The Government noted that these changes were consistent with the findings of the Commission's draft report and that it would give further consideration to price regulation of airport services 'in the light of developments in airport prices and the Productivity Commission's final report' (Hockey 2001).

3.3 Quality of service monitoring

The Airports Act (described in section 3.5) provides for the ACCC to undertake monitoring of quality of service provision by airport operators at core-regulated airports as a complement to price regulation. Quality of service 'will be taken into account by the ACCC in its deliberations on pricing proposals' (DoTRD 1996, p. 6), including in its assessment of airport compliance with the price cap and its consideration of prices notification by Sydney Airport.[18]

Prior to October 2001, quality of service monitoring applied to all airports subject to price regulation (that is, all core-regulated airports). As noted above, since the October 2001 regulatory changes, quality of service monitoring has continued to apply to all core-regulated airports, even though several are no longer subject to price regulation (Coolangatta, Alice Springs, Hobart, Launceston and Townsville).

Quality of service monitoring, together with the provision of airport company accounts to the ACCC, is intended to assist in improving the transparency of airport performance. In this capacity, monitoring is intended to: discourage airport operators from providing unsatisfactory service quality; encourage them to provide information as a basis for improved negotiation between them and airport users; and to assist the Government to address other public interest matters relating to the regulation of airports (ACCC 1997b).

Under the Airports Act, the ACCC is limited to monitoring the services and facilities provided by, or which could be influenced by, airport operators. Thus the ACCC does not directly monitor service quality of other key organisations providing services at the airport — for example, airlines, Airservices Australia (ASA), Australian Customs Service, Australian Quarantine and Inspection Service, Department of Immigration and Multicultural Affairs, and Australian Federal

17 Direction No. 25, October 2001. Replaced Direction No. 21.

18 Direction No. 20, October 2000, and Direction No. 18, June 2000, respectively.

Police. Consequently, key aspects of an airport's operations, such as domestic terminals leased to airlines, are not subject to ACCC monitoring.

Airports Regulations 1997 (Airports Regulations), pursuant to the Airports Act, specify the performance indicators to be used by the ACCC in monitoring and evaluating the quality of airport services.[19] The ACCC uses approximately 50 indicators that cover the following services and facilities:

- airside services (for example, taxiways and aerobridges);
- terminal services (for example, gate lounges and baggage handling); and
- ground access services (for example, car parking).

There are usually several indicators for each service. The services covered, and the indicators, for Phase 1 airports and Sydney Airport, are different in some respects from those for Phase 2 airports.

The indicators specified for gates and aircraft parking services for Phase 2 airports are illustrative of the indicators used. They are:

- any change over time in the number of aircraft parking bays;
- any change over time in the total area of designated bay area; and
- the change over time in satisfaction with the system, according to a questionnaire of airlines (Airports Regulations, Schedule 2, Part 2).

Some indicators are 'static' and objective (for example, the number of aerobridges) and others are subjective (for example, satisfaction with check-in waiting times).[20] Information on the indicators is sought from a variety of sources, including airport operators (information for static indicators), passengers (survey), airlines (survey), ASA and Australian Customs Service (survey).

Records to be kept by the airport operators, to be provided to the ACCC, are also set out in the regulations.[21] These vary between Phase 1 and Sydney airports, and Phase 2 airports.

19 Airports Regulations, Schedule 2, Parts 1 and 2.

20 'Static' indicators are presented by the ACCC in annual regulatory reports. They represent a snap-shot at a point in time. For example, Brisbane Airport had 11 international aircraft parking bays as at 30 June 2000 (ACCC 2001b).

21 Airports Regulations, Schedule 3, Parts 1 and 2.

3.4 Access regulation

The access framework applying to airports determines the airport services or facilities to be subject to access regulation, and sets out procedures for the terms and conditions (including prices) of access to be determined. There are two separate legislative instruments providing for access to airports: an airports-specific instrument (s. 192 of the Airports Act); and a general instrument (Part IIIA of the TP Act).

Other aspects of these acts that affect airport operations and have the potential to affect the prices of airport services are described in section 3.5.

Section 192 of the Airports Act

Section 192 sets out an access regime for all privatised airports designated as core-regulated airports under the Airports Act. Section 192 continues to apply to those core-regulated airports no longer subject to price regulation since the regulatory changes of October 2001 (Coolangatta, Alice Springs, Hobart, Launceston and Townsville). The access regime allows airport operators 12 months after an airport has been privatised (with a possible 12-month extension for Phase 2 airports) to have an access undertaking accepted by the ACCC. An access undertaking is a legally binding document setting out the terms and conditions under which access to the services provided by essential airport facilities will be made available to access seekers. If an undertaking is accepted by the ACCC, the services covered by the undertaking cannot be declared for the purposes of Part IIIA of the TP Act (see below).

If an undertaking is not accepted by the ACCC within the designated period, the Minister must determine that each 'airport service' at the airport is a declared service for the purposes of Part IIIA. There is no scope to appeal an ACCC decision not to accept an undertaking, and an undertaking cannot be lodged once a service has been declared. The Minister is required to specify the expiry date of the determination, and no power is conferred on the Minister under s.192 to renew the declaration once it has expired (ACCC, pers. comm., 5 July 2001).

Rather than listing declared services, the Airports Act sets out specified criteria for declaration. The criteria are that the service:

(a) is necessary for the purposes of operating and/or maintaining civil aviation services at the airport; and

(b) is provided by means of significant facilities at the airport, being facilities that cannot be economically duplicated;

and includes the use of those facilities for those purposes. (s. 192(5))

Section 192 provides for the ACCC to determine whether a specified service satisfies the criteria and, therefore, whether it is an airport service covered by the Minister's declaration. Amendments were made to s. 192 in 1998 (s. 192(4A–D)), which gave the ACCC the power to make a written determination that a service is, or is not, an airport service without reference to the criteria in s. 192(5). However, the ACCC has stated that a determination always will involve an assessment of the criteria in s. 192(5), and only where application of the criteria will result in perverse outcomes will the ACCC make a decision that appears inconsistent with the criteria (ACCC 1998g). A determination under the amendments can be disallowed by the Parliament under s. 48 of the *Acts Interpretation Act 1901*, and can be reviewed by the Federal Court under s. 39B of the *Judiciary Act 1903* in limited circumstances.[22]

The ACCC may determine that a service is an airport service on its own volition, but generally will do so only on the application of an interested party. It will generally conduct a public inquiry, except where it is clear the service satisfies the declaration criteria (ACCC 2000a). If a service is determined to be an airport service, then the airport operator must negotiate commercial terms with access seekers, or submit to arbitration.

The Airports Act does not provide for appeal against a decision to declare a service as an airport service.[23] However, s. 44K of the TP Act provides limited scope for appeals to be lodged with the Australian Competition Tribunal within 21 days of the Minister's automatic declaration of airport services at an airport.[24] There is currently no scope for appeal against undertaking decisions. Appeal rights for arbitrated terms and conditions of access exist under Part IIIA.

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22 Section 192(4A–B) is delegated legislation, which may be declared to be invalid by the Federal Court on the grounds of unreasonableness if it leads to manifest arbitrariness, injustice or partiality (ACCC, pers. comm., 29 June 2001).

23 Applications may be made to the Administrative Appeals Tribunal for review of decisions made by the Minister under the Airports Act (s. 242). However, this section is not applicable to access decisions.

24 Because the automatic declaration of 'airport services' at an airport does not refer to specific services, whether a specific service is declared will only be determined following an ACCC determination that the service is an 'airport service' as defined in s. 192(5). Unless such determinations are made within 21 days of the automatic declaration, the appeals processes prescribed in the TP Act are not available.

Melbourne and Perth airports lodged access undertakings with the ACCC in early 1998, covering a range of services within and outside the price cap. In its draft determinations, the ACCC stated that it did not accept either undertaking because, in its view, the dispute resolution procedures were inadequate and the provisions of the undertakings were not of sufficient clarity to be enforceable (ACCC 2000a). Neither airport pursued lodgement of an undertaking beyond this point. (The lodgement of undertakings by Melbourne and Perth airports is discussed further in chapter 9.)

Given that no undertakings had been accepted by the ACCC prior to expiry of the designated period, the Minister determined that airport services at all privatised core-regulated airports were declared. The Minister also determined that the declarations should expire on 30 June 2002 for Phase 1 airports and 30 June 2003 for Phase 2 airports. Included are services provided by those other than airport operators, such as freight operators and terminals leased by airlines. As noted above, there is no provision for the Minister to renew these declarations.

The ACCC has received two applications for a determination on whether a service is a declared airport service under s. 192. The applications — from Delta Car Rentals and Virgin Blue — both related to services at Melbourne Airport. (ACCC decisions relating to these applications are discussed in chapter 9.)

As noted above, s. 192 sets out an access regime for the privatised core-regulated airports. Airport services at Sydney Airport are currently not declared under s. 192. However, the Part IIIA access regime applies to Sydney Airport (and non-core-regulated airports — section 3.6).

Part IIIA of the Trade Practices Act

Part IIIA of the TP Act establishes a legislative regime to facilitate third-party access under agreed or determined terms and conditions (including prices) to the services of essential facilities[25] of national significance in prescribed circumstances. Part IIIA is intended to apply when commercial negotiations fail to secure access to the services provided by an essential facility or when parties cannot reach agreement concerning the terms and conditions (including prices) of access. It applies to all incorporated and unincorporated businesses and Commonwealth, State and Territory government businesses, and thus applies, in principle, to all Australian

25 Facilities that are the source of intermediate services essential to upstream or downstream service provision.

airports, including core-regulated airports and airports operated by local government.[26]

In providing for access to the services of an essential facility, Part IIIA allows regulation of the terms and conditions for use of the facility. This is considered necessary because imposing an obligation to supply could be circumvented by the terms and conditions of supply, especially price.

Under Part IIIA, a third party can seek access to eligible services through one of three avenues:

- through a request that the National Competition Council (NCC) recommend that the responsible Minister *declare* access to those services;
- through a legally binding *undertaking* from the facility operator approved by and registered with the ACCC; or
- through a State or Territory access regime *certified* by the responsible Minister as being effective following a recommendation by the NCC.

Specific criteria must be satisfied before access can be obtained through any of these avenues. While the exact criteria differ among the three avenues, the criteria generally refer only to access to the services provided by nationally significant natural monopoly facilities.

Given that no airport undertakings have been accepted by the ACCC and that certification is not relevant in the case of access to airport services (Commonwealth access regimes currently are not covered by the certification provisions), parties seeking access to airport services under Part IIIA must request the NCC to recommend that the responsible Minister declare the service.

When assessing declaration applications, the NCC and the designated Minister must consider six criteria specified in the TP Act:

(a) that access (or increased access) to the service would promote competition in at least one market (whether or not in Australia), other than the market for the service;

(b) that it would be uneconomical for anyone to develop another facility to provide the service;

(c) that the facility is of national significance, having regard to:

(i) the size of the facility; or

26 While all airports are subject to declaration, there may be limits on arbitration of access disputes. Under s. 44R, access disputes can only be dealt with if either the provider or access seeker is a corporation, or if access is required for interstate trade or commerce (ACCC, pers. comm., 3 May 2001).

(ii) the importance of the facility to constitutional trade or commerce; or

(iii) the importance of the facility to the national economy;

(d) that access to the service can be provided without undue risk to human health or safety;

(e) that access to the service is not already the subject of an effective access regime;

(f) that access (or increased access) to the service would not be contrary to the public interest. (ss 44G(2) and 44H(4))

If a service is declared, the service provider must attempt to negotiate mutually acceptable terms of access with an access seeker. If negotiations fail, the parties can appoint a private arbitrator to determine terms and conditions of access. If the parties cannot agree on an arbitrator, the dispute can be referred to the ACCC to determine whether, and on what terms and conditions, access should be provided. Access determinations are enforced via the Federal Court.

As noted above, s. 44K of the TP Act provides for the service provider (if the Minister declares a service) or the access seeker (if the Minister decides not to declare a service) to apply in writing to the Australian Competition Tribunal for a review of the declaration decision. The application for review must be made within 21 days after publication of the Minister's decision. The review by the Tribunal is a re-arbitration of the access dispute, and the Tribunal may affirm, vary or set aside the Minister's decision.

There has been only one case seeking declaration of an airport service under Part IIIA. In November 1996, Australian Cargo Terminal Operators Pty Ltd (ACTO) — a small business which provides cargo terminal services to international airlines — sought access to various freight handling and related services provided by facilities owned by the FAC at Melbourne and Sydney airports (chapter 9).

Part IIIA of the TP Act and the associated Clause 6 of the Competition Principles Agreement (CPA) were the subject of a Productivity Commission inquiry in 2001. (For a more detailed discussion of Part IIIA, see PC (2001a).)

Other access arrangements

Access arrangements for privatised, core-regulated (and non-core-regulated) airports are also contained in the individual airport leases. The publicly available leases for Phase 1 and 2 airports contain similar access provisions, and require the lessee at all times to provide for the use of the airport site as an airport, and to provide for access to the airport by intrastate, interstate and international (where

applicable) air transport.[27] The leases provide for the lessee to comply with any demand management scheme under the Airports Act, and to refuse to give access to aircraft where an owner or operator of the aircraft has failed to pay any amount due for the use of the airport (and where the lessee has provided the Government with notice of its intention to refuse access), without being in default of these obligations.

While the access provisions in airport leases provide for access to airports by aircraft operators, they do not provide for determination of the terms and conditions of access. Further, the access provisions do not provide for access by other airport users.

In some cases, access arrangements are also contained in airport sale agreements. For example, the sale agreement for Canberra Airport requires the airport operator to negotiate in good faith on access arrangements for the Very High Speed Train project (Commonwealth of Australia 1998b).

Some years prior to privatisation, long-term domestic terminal lease agreements between the FAC and the incumbent airlines, Qantas Airways and Ansett, were re-negotiated. Among other things, the re-negotiated lease agreements required the incumbents, on application, to make gates at their terminals at some core-regulated airports available to new entrants — two gates each in Sydney and Melbourne and one gate each in Adelaide, Perth and Coolangatta. Ansett was also required to make a gate available at Launceston Airport (IC 1992).

Access to ground-handling services by international airlines is covered in Australia's bilateral air services arrangements (section 3.5), which state that ground services shall be available on an equal basis to all airlines (DoTRS 2000c).

Most of the larger Australian airports have developed a general 'conditions of use' document, which sets out physical arrangements, and security and other requirements, together with commercial conditions such as facilities provided, fees, services and indemnities that would apply for potential new airlines to obtain access to the airport. Similar documents exist or are being developed by airports to facilitate access by operators wishing to provide ground-handling services at an airport (DoTRS 2000c).

27 Subject to a force majeure clause relating to the lessee's responsibilities in case of an event that is beyond the reasonable control of the lessee and prevents the lessee from providing for access.

3.5 Other relevant regulation for core-regulated airports

All core-regulated airports were subject to price regulation prior to changes in October 2001. Since then, price regulation has been removed from several of these airports (Coolangatta, Alice Springs, Hobart, Launceston and Townsville). However, they all continue to operate within a comprehensive and complex (non-price) regulatory environment that includes both domestic (Commonwealth, and State and Territory) and international agreements. These airports are also subject to the terms and conditions set out in airport lease and sale agreements.

All of these regulations affect the operations of airports (directly or indirectly) and therefore have the potential to affect the prices of airport services. Moreover, the domestic regulations are administered independently by different regulatory agencies, yet often the effects of these regulations are related. For example, the ability of airports to comply with price-cap arrangements under the PS Act may be affected by their compliance with other (non-price) regulatory requirements.

Commonwealth regulation

Trade Practices Act

All core-regulated airports are corporations and therefore are subject to the provisions of the TP Act, administered by the ACCC. Provisions that may be of relevance to airport operations include those relating to access to services (Part IIIA — as discussed in section 3.4), and anti-competitive practices (Part IV).

Part IV prohibits a range of anti-competitive practices. Arrangements or contracts that contain exclusionary provisions or have the purpose, or effect, of substantially lessening competition — for example, price fixing, secondary boycotts and restricting supply — are prohibited (ss 45–45EB).

Misuse of market power is also prohibited. A corporation that has substantial market power is prohibited from taking advantage of that power for the purpose of eliminating or damaging a competitor, preventing entry into any market and deterring or preventing a person from engaging in competition (s. 46).

Exclusive dealing and resale price maintenance are prohibited under ss 47 and 48 respectively.

The TP Act also prohibits mergers and acquisitions that would result in substantial lessening of competition in a substantial market (s. 50). With this in mind, the

ACCC, which assesses proposed mergers and acquisitions, examined all bids for airport leases for potential breaches. In particular, the ACCC considered whether the operator of a major airport (Adelaide) would be permitted to lease a smaller, nearby airport (Parafield). The ACCC (2000a) concluded that the acquisition would not substantially lessen competition.

Airports Act

One of the key pieces of economic regulation of core-regulated airports, including Sydney Airport, is the Airports Act, along with the associated Airports Regulations.[28] The Airports Act has a number of stated objectives, including:

- to promote the sound development of civil aviation in Australia;
- to establish a system for the regulation of airports that has due regard to the interests of airport users and the general community;
- to promote the efficient and economic development and operation of airports; and
- to ensure diversity of ownership and control of certain major airports. (Part 1, s. 3)

Some of the key features of the Airports Act relate to access, ownership controls, environmental management, building and construction controls, demand management and quality monitoring (box 3.3). Regulation under the Airports Act relating to access arrangements and monitoring of the quality of service at core-regulated airports is discussed in sections 3.4 and 3.3 respectively.

In general, provisions of the Airports Act apply to Sydney Airport as they do to other core-regulated airports. However, in some instances, the Act regulates Sydney Airport to a greater extent — for example, in relation to cross-ownership and demand management. In other areas, Sydney Airport is subject to less regulation; it has been granted an extension on the development of a master plan because of the proposed sale of the airport, and access provisions (s. 192) are not applicable until the airport is sold.

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28 The Airports Act was amended by the *Aviation Legislation Amendment Act 1997* and the *Airports Amendment Act 1999*, which extended the period available for lessees to negotiate access undertakings. Neither made substantial changes to the key features of the Airports Act (box 3.3).

Box 3.3 **Key features of the Airports Act**

The Airports Act sets out a regime for the regulation of airports, including:

- airport operators are subject to a 49 per cent limit on foreign ownership, a 5 per cent limit on airline ownership and a 15 per cent limit on cross-ownership for Sydney/Melbourne, Sydney/Brisbane and Sydney/Perth airports (Part 3). In early 2002 the Government intends to introduce legislation to change the 5 per cent airline ownership rule so that general aviation airports are exempted (Anderson 2001a);
- each airport must have an airport master plan approved by the relevant Minister. This 20-year forward plan identifies, among other things, development objectives, assesses the future needs of aviation users, forecasts noise exposure levels and includes proposals for land use and related development (Part 5, Div. 3);
- a major development plan (approved by the relevant Minister) is required for each major airport development — for example, constructing a new runway, constructing a new building or extending a taxiway or road (Part 5, Div. 4). The *Airports (Building Control) Regulations 1996* establish a system for approval of building and construction activity on airports;
- an environment strategy, also subject to approval by the relevant Minister, must specify, among other things, environmental management objectives and sources of environmental effects associated with airport operations (Part 6, Div. 2);
- an airport operator may be required to give accounts and reports to the ACCC (Part 7, Div. 3). In addition, the ACCC will monitor the quality of airport services and facilities (Part 8, Div. 1);
- regulations may implement certain international agreements (Part 10, Div. 8);
- an airport service will be a declared service for the purposes of the access regime under Part IIIA of the TP ACT unless an access undertaking is given within 12 months of privatisation (Part 13, Div. 2, s. 192). An airport may also be required to provide access for defence, emergency or disaster relief purposes (Part 9, Div. 10);
- the relevant Minister may formulate a demand management scheme for an airport, being a category exclusion scheme, a slot allocation scheme, or a movement limitation scheme (Part 13, Div. 1). The Minister may also declare the capacity of an airport, in terms of the maximum number of aircraft movements an airport is capable of handling in a specified time period (Part 13, Div. 4); and
- ASA will oversee the provision of air traffic services and rescue and firefighting services at airports (Part 14, Div. 10).

Source: Airports Act 1996.

Other regulation

The main other Commonwealth regulations affecting core-regulated airports' operations, costs and pricing include:

- The *Air Services Act 1995* and Air Services Regulations established the structure, functions and powers of ASA. ASA's functions include the provision of facilities to permit safe navigation of aircraft within Australian airspace and the provision of services, such as air traffic services, aeronautical information and radio navigation services, and rescue and firefighting services (Part 2, Div. 2, s. 8). Although ASA directly charges airlines for its services, smaller core-regulated airports, such as Hobart Airport (sub. 11), contended that relatively high ASA charges precluded the airport from increasing its charges.
- The Civil Aviation Safety Authority (CASA), which conducts the safety regulation of civil air operations, was established in 1995 under an amendment to the *Civil Aviation Act 1988*. Among other things, CASA is responsible for establishing and enforcing aviation safety standards, and issuing aerodrome licences. An airport will incur expenses associated with maintaining the airport to comply with licence requirements.
- The *Environment Protection and Biodiversity Conservation Act 1999* ensures that matters significantly affecting the environment are fully considered through, for example, environmental impact statements (EIS). Airport activities that generate, or have the potential to generate, pollution or excessive noise are regulated by the Airports (Environment Protection) Regulations 1976, made under the Airports Act. Any compliance costs (for example, the development of an EIS) must be met by the airport.
- All passengers, crews and freight (plants, animals and other goods) entering and departing Australia via airports are subject to customs control procedures (*Customs Act 1901* and regulations). Passengers, freight and the aircraft may also be subject to quarantine procedures under the *Quarantine Act 1908*, *Imported Food Control Act 1992* and *Export Control Act 1982* (and regulations). Passengers also are subject to immigration controls under the *Migration Act 1958*. Outbreaks of contagious diseases in other countries, such as foot and mouth disease in Britain, can have a substantial effect on the processing of passengers and freight at airports. Various Commonwealth agencies may be involved in the above controls, including the Australian Customs Service, Australian Quarantine and Inspection Service, Department of Immigration and Multicultural Affairs, and Australian Federal Police. These services generally require substantial floor space, which is provided by airport operators for nominal rent.

There are a number of other Commonwealth regulations that affect the operation of airports, and thus indirectly may affect pricing.

- The *Air Navigation Act 1920* and Air Navigation Regulations 1947 regulate air navigation, such as international aircraft, international airlines, non-scheduled flights, aircraft on international flights, investigation of accidents, and aviation and airport security (including passenger and freight). In particular, the Act approves ratification of the Convention on International Civil Aviation (Chicago Convention) (see below). Pursuant to this Act, the Air Navigation (Coolangatta Airport Curfew) Regulations 1999 restrict certain aircraft movements at that airport between 11pm and 6am.
- The *Adelaide Airport Curfew Act 2000* and associated regulations impose curfew restrictions, similar to those at Coolangatta, on aircraft movements at Adelaide Airport.
- Curfew arrangements at Sydney Airport are prescribed under the *Sydney Airport Curfew Act 1995* and associated regulations. As at Adelaide and Coolangatta airports, a curfew applies between 11pm and 6am. However, there are also several related restrictions controlling use of runways during shoulder times on week days and weekends, international passenger aircraft movements and quota requirements applying to take-offs and landings. The Commonwealth Government has confirmed that the curfew will remain in place following the sale of the airport (Anderson and Kemp 2001).
- Slot management for aircraft arrivals and departures at Sydney Airport is regulated separately from other core-regulated airports (box 3.4).
- A 'noise' levy is imposed on the operators of jet aircraft landing at leviable airports under the *Aircraft Noise Levy Act 1995* and the *Aircraft Noise Levy Collection Act 1995*. An airport is deemed to be leviable if it meets certain criteria regarding residential exposure to particular noise levels. There are two leviable airports: Sydney and Adelaide. The levy is not imposed on aircraft with noise assessed to be below a specified level.

Box 3.4 **Sydney Airport demand management**

The *Sydney Airport Demand Management Act 1997* prescribes a maximum of 80 aircraft movements in any hour and establishes a framework for a slot management scheme.[29] Details of the system for allocating slots are set out in the Slot Management Scheme 1998 (made under the Airports Act), including grandfather rights to slots, the 'use it or lose it' test, how to apply for a slot, how slots are allocated and slot swaps. The slots are allocated and administered by the Slot Manager, Airport Coordination Australia.

One feature of the slot management scheme is the 'regional ring fence' which effectively creates a separate pool for regional slots. Under these special rules, a regional service operator may gain a permanent slot if a service is operated for two consecutive seasons (s. 10). Moreover, regional slots cannot be transferred to non-regional services (s. 19).

Enforcement arrangements are set out in the Sydney Airport Compliance Scheme 1998, also made under the Airports Act. The Commonwealth Government has confirmed that the 80 movements per hour cap and regional ring fence will continue after the sale of the airport (Anderson and Kemp 2001).

Airport lease and sale agreements

The lessee of each core-regulated airport (including Sydney Airport even though it is not privatised) has signed a lease agreement and a sale agreement with the Commonwealth of Australia (the lessor).

Lease agreements

The lease agreements set out various obligations on the part of lessees.[30] For example, Australian Airports (Townsville), as the lessee:

- must comply with certain access conditions (described in section 3.2);
- must maintain the airport in good repair;
- must develop the airport at its own cost, having regard to the actual and anticipated future growth in traffic demand, 'reasonably expected' quality standards and good business practice; and

29 A slot is defined under s. 34 of the Act as 'a permission for an aircraft movement'. A slot allocated under the scheme permits a specified aircraft movement at a specified time on a specified day.

30 These agreements also include obligations on the part of the lessor.

- must, if the option to renew the lease has not been exercised, rebuild any structure damaged or destroyed during the last 10 years of the lease to an agreed standard. In addition, any removal or demolition of structures during the last 10 years must be approved by the lessor (Commonwealth of Australia 1998a).

Perusal of other publicly-available leases for Phase 1 and other Phase 2 core-regulated airports indicates that similar conditions apply across these leases. However, there are some variations in leases to account for specific characteristics of airports. For example, the Canberra Airport lease includes reference to the Fairbairn defence base sub-lease (Commonwealth of Australia 1998b).

Sale agreements

Publicly-available airport sale agreements also do not vary significantly across core-regulated airports in terms of the general contents. Each core-regulated airport's sale agreement contains, among other things, provisions relating to the transfer (sale) price, sale completion process, resale restrictions and superannuation. However, there are airport-specific variations to the agreements. For example, unlike other airports, the Canberra Airport sale agreement contains a provision obliging the airport to negotiate in good faith concerning access arrangements for a potential very high speed train terminal (Commonwealth of Australia 1998b). Moreover, clearly the agreements will differ to the extent that sale prices, deposits and so on vary across airports.

The sale agreements commit core-regulated airports to spend a specified amount of money on airport development, which could include constructing a new runway, constructing a new passenger terminal or extending an apron. The airport is committed to outlay a specified sum of money in each of two time periods — the first period being within five years of the lease, and the second period being the five years thereafter. However, there are provisions for non-compliance with the development obligations, including force majeure[31] and other delay events, and mitigation due to economic factors, such as a shortfall in the targeted increase in passenger numbers.

State and Territory regulation

In the absence of Commonwealth regulation, core-regulated airports and their business activities are subject to State and Territory regulation. Even though environmental, planning and building controls are predominantly Commonwealth,

31 Events beyond the reasonable control of the lessee.

State and Territory legislation applies, for example, in the areas of waste management and occupational health and safety.

State and Territory regulation, such as fair trading legislation, also relates to on-site commercial trading, gambling, liquor licensing and vehicle parking at airports.[32] The transition to State and Territory regulation in these areas was aided by the promulgation of the Airports (Control of On-airport Activities) Regulations 1997. Businesses operating at the airports are also subject to State and Territory regulation.

Capital Airport Group (Canberra Airport) commented on the considerable degree of Territory (box 3.5), Commonwealth and even State regulation with which it has to comply and, in particular, that on occasions the regulation between these jurisdictions appeared to overlap. For example, in the planning area, the National Capital Authority overlaps with the Commonwealth airport building controller and airport environment officer (Capital Airport Group, pers. comm., 30 April 2001).

Box 3.5 **Territory and State regulation (and regulators) affecting the operation of Canberra Airport**

Some of the Territory and State regulation (and regulators) affecting the planning, and development and construction, at Canberra Airport are:

Planning

- National Capital Authority;
- ACT Planning and Land Management;
- Environment ACT;
- ACT Retail Leases Code;
- ACT Tree Preservation legislation; and
- NSW Department of Urban Affairs and Planning (land use planning in flight path corridors).

Development and Construction

- Building, Electrical and Plumbing Control Regional Office, ACT Government;
- ACT Electricity and Water;
- ACT Stormwater;
- ACT Fire Brigade; and
- ACT Public Health.

Source: Capital Airport Group (pers. comm., 30 April 2001).

There are few State and Territory regulations that are specific to airports or aviation. Most relevant is the *Aerodrome Fees Act 1998* in South Australia, which gives private and public owners of former Commonwealth airports the statutory authority

32 Fair trading legislation substantially mirrors the consumer protection provisions of the TP Act.

to recover fees from users who endeavour to avoid payment. Other States that have addressed this issue have done so through the amendment of existing legislation; for example, New South Wales amended its local government legislation.

International agreements

International agreements have an effect, both directly and indirectly, on the operation of core-regulated airports. These airports are 'designated' international airports under the Air Navigation Act.[33] Perhaps of most significance is the Convention on International Civil Aviation (Chicago Convention) — a multilateral agreement signed in 1944 by Australia and other countries at the Chicago Conference. As noted above, the Air Navigation Act approves the ratification by Australia of the Chicago Convention (including the Protocols) and reproduces the Convention as Schedule 1 of the Act.[34]

The Chicago Convention is the legal foundation for the regulation of world civil aviation and includes several Articles that bear on economic regulation of aviation directly, and thus affect airport operations and pricing (box 3.6). The Chicago Convention (Article 44) also established the International Civil Aviation Organization (ICAO) — a worldwide intergovernmental organisation seeking to promote the safe and orderly development of international civil aviation. As a United Nations agency, it 'sets international standards and regulations necessary for safe, regular, efficient and economical air transport and serves as the medium for co-operation in all fields of civil aviation' (ICAO 1996, p. 3.4-1).

33 Brisbane, Melbourne, Perth, Adelaide, Sydney and Darwin airports are designated 'major' international airports. Designated 'restricted use' and 'alternate' international airports are Canberra, Coolangatta and Townsville. Hobart is a designated 'restricted use' international airport. Launceston and Alice Springs are designated 'alternate' international airports. Currently, there are no international RPT operations at several of these airports (for example, Hobart, Launceston and Townsville). However, there have been international RPT operations in the past at some of these airports (for example, Hobart and Townsville). The designated international status of leased non-core-regulated airports and other airports is described in section 3.4.

34 Several Protocols amending or supplementing the Chicago Convention have been approved by ICAO over the ensuing years.

Box 3.6 **The Convention on International Civil Aviation**

Key economic regulatory features of the Chicago Convention include:

- state sovereignty over airspace (Article 1);
- rules governing permission for international non-scheduled and scheduled air services in contracting states (Articles 5 and 6);
- cabotage — that is, contracting states may refuse permission for aircraft from other contracting states to take on its passengers, mail and so on (Article 7);
- the requirement that regulations of the contracting state regarding entry, customs, quarantine and so on must be complied with by other contracting states (Article 13);
- the requirement that airports in contracting states that are open for public use by national aircraft must be open under uniform conditions to aircraft from other contracting states. Airport charges for aircraft from other contracting states should be no higher than those for national aircraft (Article 15);
- the requirement that air navigation be expedited and that unnecessary (particularly administrative) delays to aircraft, passengers, crews and cargo be prevented (Article 22); and
- the requirement that contracting states agree to provide airports and navigation facilities which facilitate international air navigation and are in accordance with the Convention. Operational systems should also be in accordance with the Convention (Article 28).

Source: Convention on International Civil Aviation.

ICAO develops and releases various policies and guidelines on the regulation of air transport (for example, on airport charges, capacity and tariffs), manuals (including one to provide guidance to airport managers) and technical annexes to the Chicago Convention dealing with areas such as aeronautical communications, ground handling, meteorology, operations and security.

Another major agreement signed at the Chicago Conference was the International Air Services Transit Agreement (known as the Two Freedoms Agreement), which provides for the multilateral exchange of rights of overflight and non-traffic landing for scheduled international air services among contracting states. Australia's ratification of this agreement has been approved under the Air Navigation Act.

The General Agreement on Trade in Services (GATS) has the potential to affect airport operations through the liberalisation of international trade in air services. As a member of the World Trade Organization, Australia is required to accept the GATS as part of the outcome of the Uruguay Round of multilateral trade negotiations concluded in 1994.

GATS coverage of air services is limited. The Annex on Air Transport Services to GATS excludes aviation with three exceptions where GATS commitments apply: aircraft repair and maintenance services; selling and marketing of air transport services; and computer reservation system services. However, these services are covered only if member countries schedule them as specific commitments. Progress generally has been slow, and Australia has not yet scheduled all three.

Bilateral, rather than multilateral, agreements (air service arrangements) are a feature of the regulation of international air services. Australia has over 50 bilateral agreements. Essentially, they define the terms and conditions under which airlines of either party will have access to the airspace of the other party. Provisions typically include the specification of capacity, frequency, routes, cities, ownership provisions and price approval processes (PC 1998a). For example, Australia's agreements with Japan and Italy guarantee the designated airlines of these countries access to particular Australian airports and specify the capacity on those routes. Such agreements may directly affect airports by placing limits on international traffic.[35] Airports therefore may be limited in the amount of business they can attract.

However, the nature of bilateral agreements involving Australia is changing. The Productivity Commission examined bilateral agreements, among other things, in its inquiry into International Air Services (PC 1998a). It recommended that Australia, as a step towards further liberalisation of international air services, should seek to negotiate reciprocal 'open skies' agreements on a bilateral basis which would remove various restrictions, including those on passenger and freight capacity and frequency, routes, multiple destinations, prices and cabotage. The Commission also recommended that 'Australia should offer unlimited capacity to fly to all airports other than Sydney, provided that Australian carriers are offered the same routes on a reciprocal basis by their bilateral partners' (PC 1998a, p. 233).

The Commonwealth Government has implemented most of these recommendations (Costello and Anderson 1999) and is currently re-negotiating bilateral agreements with other countries (for example, Singapore, the United Kingdom and the United States) in moving towards a target of open skies.[36] In November 2000, Australia's first open skies agreement — with New Zealand — was signed (Anderson and Gosche 2000). This move towards liberalisation of international air services is

35 Australian agreements relate to RPT, not charter flights.

36 The Commonwealth Government has not implemented the Commission's recommendations in full. For example, it has not removed restrictions on cabotage, and unlimited capacity will be offered only for international airports other than Melbourne, Brisbane and Perth, as well as for Sydney (Costello and Anderson 1999).

likely to assist airports, where capacity exists, to gain increased international passenger traffic.

International carriers with access must be treated in accordance with GATS, the Chicago Convention and bilateral agreements. Airports have an obligation to abide by the intent and spirit of the agreements negotiated by their governments. If an international carrier considers that a breach might have occurred, it may ask its government to take up the complaint with the Australian Government. As noted above, the Airports Act (Part 10) provides for the introduction of regulations to require an airport operator to comply with particular international agreements. Penalties apply for non-compliance. An example of such a complaint occurred in the 1980s when US carriers alleged that the UK Government (because Heathrow Airport is operated by the British Airports Authority) had breached the user charges article in the Bermuda II agreement — a bilateral agreement between the United Kingdom and United States. The US Government took the complaint of the carriers to the UK Government. An arbitral tribunal was established to adjudicate the issue (Toms 1994).

Apart from ICAO, the other major international body to influence the regulation of international air services is the International Air Transport Association (IATA). IATA, established in 1945, is a trade association currently representing over 230 airlines. Its stated goals include:

- providing safe, reliable and secure air services;
- developing cost-effective, environmentally friendly standards and procedures to facilitate the operation of international air services; and
- identifying and articulating common industry positions and supporting the resolution of key industry issues (IATA 2001).

IATA coordinates and standardises technical, operational and commercial aspects of airline operations through its committee work, and it acts as a clearing house for inter-airline accounts. For example, voluntary scheduling conferences provide a forum for reaching consensus on schedule adjustments necessary to meet airport capacity constraints, and tariff coordination conferences enable the discussion of, and agreement on, 'reference fares' for passenger fares and cargo rates to facilitate interlining and the division of revenue between interlining airlines.[37]

37 Interlining involves connecting passengers between two airlines on the same ticket.

3.6 Regulation of airports not subject to price regulation

Most airports in Australia are not subject to price regulation; they cater for general aviation traffic rather than RPT (chapter 2). The regulatory environment differs depending on whether these airports are leased from the Commonwealth Government.

Leased core-regulated airports

As noted in section 3.2, in October 2001, the Government announced the removal of all price regulation for five core-regulated airports; Coolangatta, Alice Springs, Hobart, Launceston and Townsville. The non-price regulatory framework within which these airports operate remains unchanged, and is described in section 3.5.

Leased non-core-regulated airports

Seven non-core-regulated airports have been leased by the Government and privatised: Mount Isa, Tennant Creek, Archerfield, Jandakot, Moorabbin, Parafield and Essendon.[38] In addition, three Sydney basin airports (Bankstown, Camden and Hoxton Park) have been leased but are yet to be privatised. (Sydney Airport — a core-regulated airport — was discussed in previous sections of this chapter.) These 10 airports, which are not subject to price regulation, must, however, comply with other Commonwealth legislation applying to core-regulated airports, including the Airports Act.

Some of the provisions of the Airports Act, such as the access provisions (s. 192) and the provisions on quality of service monitoring (Part 8), do not apply to these 10 airports because they are not core-regulated airports. However, the Act does apply where airports are specified in the regulations. For example, all of these airports, except for Mount Isa and Tennant Creek, are specified in the Airports Regulations for the purposes of land use, planning and building controls. Thus, they must meet the requirements of Part 5 of the Act, including the development of a master plan.

Airport lease agreements for these leased non-core-regulated airports are similar to Phase 2 core-regulated airport agreements, but with some airport-specific variation.

38 As noted in chapter 1, the sale of Essendon Airport was completed in September 2001 and the Sydney basin airports are to be sold in the second half of 2002.

For example, unlike Phase 2 core-regulated airports, Mount Isa Airport has no provisions in its lease for the costs of an airport environment officer.[39]

Sale agreements for the airports that have been privatised are, in general, similar to those for core-regulated airports. However, one important difference is that these airports are not subject to airport development obligations under the agreement.

As with core-regulated airports, leased non-core-regulated airports are subject to State and Territory regulation where Commonwealth regulation does not apply.

Unlike the core-regulated airports, none of these airports are designated international airports. In the absence of international RPT services, international agreements are of substantially less relevance.

Other airports

Other non-core-regulated airports include regional airports with both RPT and general aviation such as Orange, Mildura and Broome, and numerous smaller general aviation airports such as Lilydale and Pine Creek (chapter 2). Also included in this 'other' group is Cairns Airport. Over 200 airports are owned and operated by local government. Other airports are owned and operated by statutory government authorities (for example, Cairns) and the remainder are under private control.

These other airports are not subject to Commonwealth price regulation or the provisions of the Airports Act. They are, however, subject to some other Commonwealth legislation — for example, the Air Navigation Act and Part IIIA of the TP Act.[40] Part IV of the TP Act applies to airports that are corporations. Airports that are unincorporated businesses are subject to State and Territory competition codes (a modified version of Part IV) enforceable by the ACCC.

Without the regulation of the Airports Act, State and Territory government regulation applies to this group of airports to a greater extent than it applies to airports leased from the Commonwealth. For example, planning and approval of building and construction at Commonwealth leased airports is regulated by Commonwealth legislation; State and Territory legislation applies to building and construction activity at these other airports.

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39 Pursuant to the Airports Act, the Airports (Environment Protection) Regulations 1997 exempt Mount Isa Airport from the environment provisions of Part 6 of the Act.

40 All Australian airports are subject to declaration under Part IIIA of the TP Act. However, under s. 44R, there may be limits on arbitration of access disputes for some regional airports, including those operated by local municipalities (section 3.2).

International agreements are of little relevance to these airports because few are designated international airports, and when they are designated, it is generally on a limited basis.[41] An exception is Cairns Airport, which has a considerable number of international RPT services. Some others, such as Broome and Port Hedland airports, have international RPT services from time to time (DoTRS 2000b). International agreements affect the costs and pricing of these airports in a similar manner to core-regulated airports.

41 Designated international airports (either 'restricted use' and/or 'alternate', 'non-scheduled' or 'external territory') in this 'other' airports category are Cairns, Avalon, Broome, Coffs Harbour, Learmouth, Lord Howe Island, Port Hedland, Dubbo, Kalgoorlie, Rockhampton, Tindal, Horn Island, Norfolk Island, Christmas Island and Cocos (Keeling) Island.

4 Assessing the need for price regulation of airport services: some preliminary issues

Possible rationales for future price regulation of airport services are discussed in this chapter. Principles for efficient pricing of airport services and criteria for efficient regulation are also outlined.

4.1 Why regulate prices of airport services?

The terms of reference ask the Commission, in making its recommendations, to 'identify the rationale for any future prices regulation at airports' (para. 8(b)). Most rationales relate to potential abuses of market power by airports — in short, their potential to raise prices substantially above costs and the associated inefficient behaviour this may allow or promote.

Pricing with market power

The *prima facie* rationale for price regulation of certain airports is their perceived market power — that is, an ability to raise prices above efficient levels — and their perceived incentive to use it. (What is meant by efficient pricing is discussed below.) This concern is reflected in the terms of reference, which state that:

> … the purpose of this inquiry is to examine whether new regulatory arrangements, targeted at those charges for airport services or products where the airport operator has been identified as having most potential to abuse market power, are needed to ensure that the exercise of any such power may be appropriately counteracted. (para. 6)

Airports have natural monopoly characteristics (chapter 5). Though the tendency towards natural monopoly arises from efficiency benefits in the provision of airport services (one airport in a particular location can provide services more efficiently than two), it inevitably reduces potential competitive pressures on airports. However, the extent of market power of a particular airport in practice will depend on a range of factors, including the price responsiveness of air travellers to that destination, the share of airport costs in the airfare, airport substitution possibilities and the cost structures of other input suppliers (chapter 5). Other factors, such as the

influence of potential profits from commercial activities at airports and countervailing power of airlines, may affect the incentive for, and ability of, airports to exercise fully any market power they possess (chapter 7).

Nonetheless, the concern remains that airports with market power will increase aeronautical charges above (efficient) costs, thus increasing airfares and reducing consumption of air travel. Persistently-high airport charges normally would also yield monopoly profits for airports. In these circumstances, price regulation that promoted efficient aeronautical prices could deliver economic gains to the general community — provided such regulation did not create offsetting distortions and costs — and bring benefits to passengers and airlines at the expense of airports.

Other potential effects of market power

It has been suggested by the Board of Airline Representatives of Australia (BARA, sub. 26) that airports with market power are likely to be inefficient in production (that is, that they will allow their production costs to rise), and that they may under-supply quality. Airports with market power also may not invest efficiently to maintain monopoly profits over time.

The likelihood of such inefficiencies occurring at privatised airports with market power is discussed in chapter 7. To the extent that price regulation brought about more efficient pricing, it may also reduce these 'by-product' inefficiencies. However, in practice, some forms of price regulation may promote such forms of inefficiency by, for example, encouraging firms to 'pad' costs (chapter 10).

Airport access

In addition to pricing above (efficient) cost, the market power of airports could also be used to discourage competition in downstream (or upstream) markets (BARA, sub. 26; ACCC, sub. 38). This is more likely to occur where airports actively participate in those markets or can control competition in them. An airport with market power, for example, may restrict 'front-door' access to competing, off-airport car-park providers. This could be achieved by levying a prohibitively-high charge or by denying the off-airport provider access to a conveniently-located contact point at the airport. This is considered further in chapter 7.

However, because of strict limits on vertical integration of airports and airlines in Australia (chapter 3), airports appear unlikely to have a strong incentive to deny

access to new airline entrants, provided that the latter at least pay marginal cost and that the price does not undermine contracts with incumbent airlines.[1]

Rather than being a rationale for price regulation, denial of access to competing providers of ancillary services, or collusive actions between an airline and airport, could be addressed more directly and satisfactorily by anti-competitive provisions of the *Trade Practices Act 1974*, or by access regulation. Price regulation is unlikely to be adequate to address access issues because access can be denied by employing means other than high prices (for example, by restricting access to conveniently-located apron and/or terminal facilities). Nonetheless, price regulation that prevents excessive across-the-board price levels could help prevent marginal airlines effectively being denied access, whether this was intended or not.

Airports as public infrastructure

Another suggested rationale for price regulation, not directly related to market power as such, is that airports provide essential infrastructure that give benefits to industries other than direct users, particularly the tourism industry. It is argued that airlines should not be expected to pay the full costs of providing these facilities when other industries benefit. However, though marginal-cost pricing will promote efficient use of existing airport assets, such pricing may not provide adequate returns on new airport investment and therefore may have perverse long-run implications for airport users (section 4.3). Thus, price regulation that targets a price equal to short-run marginal cost is unlikely to be consistent with efficient long-term provision of airport services, unless it is accompanied by some form of subsidisation of those services.

Airlines and their representative bodies (International Air Transport Association, subs 9 and DR56; BARA, subs 26, 41 and DR54; Qantas, sub. 48) suggested that aeronautical charges should be calculated on a residual basis, after taking into account non-aeronautical net revenues earned by airports (the so-called single till). As discussed in chapter 10 and appendix C, however, a single-till approach, in practice, is unlikely to promote efficiency and may generate efficiency losses. Alternatively, lower airport charges could be subsidised by taxpayers, though general taxation also involves deadweight efficiency losses. It is a matter of weighing up the efficiency effects of each financing option, including the option of airport users paying the full costs of the aeronautical services provided. The Commonwealth Government's decision to privatise Australian airports without

[1] As noted in chapter 3, airports are not permitted to deny landing access to planes (for safety reasons) but effectively could deny access by imposing a very high landing charge or by restricting access to other necessary ground infrastructure such as terminals or aprons.

mandating a single till suggests that it favours the full-cost approach. This was confirmed in April 2001, in relation to future regulation of Sydney Airport, by the Minister for Financial Services and Regulation in Direction No. 22 to the ACCC.

Regulating airport profits

It has been argued by Professor Forsyth that the major rationale for price regulation is to limit the ability of airports to earn profits in excess of normal rates of return, even though such regulation is likely to have a net efficiency cost. Thus, he argued that:

> Price regulation lessens, rather than increases, the overall efficiency of airports. While not perfect, a private, unregulated airport is likely to perform better in pure efficiency terms than a regulated airport because of the efficiency costs of regulation. (sub. 5, p. 5)

But that:

> The dominant rationale in Australia for airport price regulation is one of eliminating excess profits from the use of market power. (sub. 5, p. 5)

While governments may see a need to regulate some firms to reduce perceived excess profits, the Commission has focused its attention on the likely efficiency outcomes of various options, including no price regulation of airports.

4.2 Potential efficiency and distributional effects of market power

As noted above, a major concern about the exercise of market power by airports — and the key rationale for price regulation — is that prices will exceed efficient levels, thereby reducing consumption. Principles of efficient pricing, given the nature of the airport business, are explored in section 4.3. Discussion in this section focuses on the economic cost of inefficient price levels, distinguishing between efficiency and distributional effects.

This latter distinction is drawn because it is the impact on efficiency that determines the net effect of market power on the size of the national economic 'pie'. Redistribution of income, of itself, as the result of higher (or lower) prices — at least to the extent that income is transferred between Australian residents — does not involve efficiency effects, though it may generate concerns in the community about fairness. Typically, inefficient pricing involves both efficiency losses and income transfers.

Efficiency effects of market power

Consumption below its efficient level

In essence, a firm with market power (and assuming that price discrimination is not feasible) will restrict the amount supplied and raise the price in order to increase its profits at the expense of consumers. The source of efficiency loss is the reduction in production and consumption of the good or service below the efficient level — the so-called monopoly deadweight loss. This is depicted in a simple framework in box 4.1.

How large this efficiency loss will be depends on the firm's cost structure and the price elasticity of demand. For a given marginal cost, and assuming no price discrimination, the lower the price responsiveness (elasticity) of demand, the greater the optimal price mark-up over cost.[2]

Several airports suggested, if elasticities of demand for airport services are very low, that potential efficiency losses from airport market power also will be low (compared with efficiency losses if demand were more responsive to price increases). However, this result does not necessarily hold — it assumes a price increase of a given amount, not price increases that accord with profit-maximising behaviour. In other words, with unconstrained pricing, low demand elasticities could be consistent with large efficiency losses because low elasticities imply high prices.[3] Therefore, in order to make an assessment of likely efficiency losses from pricing consistent with market power, knowledge is required about the shape and slope of the demand curve.

If a firm with market power can discriminate in pricing — that is, set different prices for different consumers and/or units sold — then efficiency costs will be reduced to the extent that consumption is not discouraged. In the limit, it is feasible that the quantity provided could be equal to the competitive level (Q_c in figure 4.1), but with some consumers (with a higher willingness to pay) paying prices above marginal cost.

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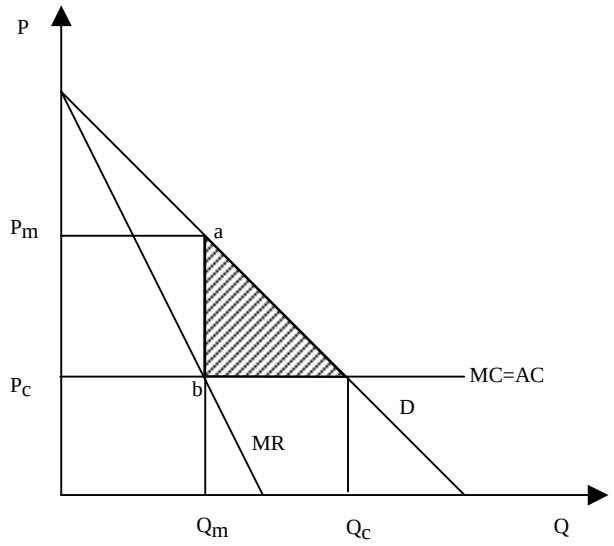
2 The optimal mark-up is the inverse of the price elasticity of demand for the firm's output, *where the relevant elasticity is measured at the mark-up inclusive price*. Therefore some caution is required in applying the inverse elasticity formula to an elasticity measured at a point on the demand curve *before* a mark-up is imposed. Even if that measured elasticity is very low, as the price is increased, the price elasticity typically will increase, with the rate of increase depending on the slope of the demand curve. The flatter the demand curve, the more rapidly will elasticity increase and therefore the smaller the optimal mark-up over costs.

3 Unless the elasticity of demand is zero — in which case, the optimal price mark-up is infinite but the efficiency loss is zero.

Box 4.1 **Pricing with market power**

Figure 4.1 depicts the cost and demand curves for a firm with market power. For simplicity, it is first assumed that marginal costs (MC) are constant and therefore equal to average costs (AC). (D is the demand curve; MR the marginal revenue curve.) Pricing with decreasing costs is discussed in box 4.2. The framework is static in the sense that it is concerned with the efficient use of existing airport infrastructure. Over time, a firm with market power will invest to increase profits.

Figure 4.1



A profit-maximising firm with market power (assuming price discrimination is not feasible) will set a price, P_m, at which marginal revenue and marginal cost are equal. This price lies above the competitive, or efficient, price of P_c where price equals marginal cost and at which price potential economic surplus (the triangle below the demand curve and above costs) is greatest. At price P_m a lower quantity is consumed and supplied (Q_m) than if price were set equal to marginal cost (Q_c). The shaded triangle indicates the loss of allocative efficiency from the exercise of market power. It shows the loss of consumers' value of the good or service (over the costs of provision) or the loss of consumer surplus less producer profits attributable to restricted consumption and supply.

Other potential efficiency effects

Market power could lead to other efficiency losses. Lack of competitive pressure could enable a firm to operate inefficiently by allowing its costs to rise or by it not adopting cost-saving or innovative technologies. Such inefficiency could be at the expense of the airport's profits but may yield a 'quiet life' for managers. Firms with market power may also seek to increase profits by allowing quality to fall, for

example, by reducing staff and investment levels. As discussed in chapter 7, the risk of such inefficiency at privatised airports appears to be constrained by a combination of competitive pressures, the incentive of airport owners to increase profits (especially from non-aeronautical activities) and the ability of airports to discriminate in pricing. Firms with market power also may seek to keep out potential competitors by lobbying government — engaging in so-called rent-seeking activities — or by investing pre-emptively in additional capacity. In other words, firms with market power may use up real resources (and profits) in a bid to retain their position in the market.

Some participants argued that the efficiency costs of higher aeronautical charges would extend beyond the immediate effects in the market for the intermediate service (that is, aeronautical services). BARA observed that the exercise of airport monopoly power would generate 'flow-on inefficiency and costs in the broader economy' (sub. 26, p. 10). The ACCC stated that:

> There are further allocative efficiency implications where the service is also an intermediate input. High prices can distort production and consumption patterns of the goods and services using air travel as an input. For example:
>
> - Air travel is a business input for many companies. Higher prices can affect business input costs and the ability of such companies to compete in Australia and overseas.
> - Air travel is critical to the development of the tourism industry. Tourism is a major contributor to the Australian economy. High airport charges have the potential to damage both domestic and international tourism. (sub. 36, p. 6)

It is almost certain that activity levels and prices in user industries will be affected by the exercise of any airport market power. The extent of the impact generally will depend on the price responsiveness of demand and supply in those markets and the degree of competition in them. However, measures of efficiency losses in the (intermediate) market for aeronautical services resulting from airport market power (as depicted in figure 4.1) generally will capture allocative efficiency losses in downstream markets. This is because the derived demand for airport services distils all the demands and supplies in those markets.

The result holds *provided* demand and supply in downstream markets (and, indeed, in the market for aeronautical services itself) are not distorted. If there are no (positive or negative) spillover effects in downstream markets that are not already accounted for in prices, then analysis need only focus on efficiency effects in the market for services provided by airports. On the other hand, if airlines have market power, the detrimental impact of excessive airport charges on air travel could be amplified.

Distributional effects of market power

Higher prices generally mean that there is a transfer of income from consumers to the producer. (In figure 4.1, at the price P_m, there is a transfer equal to rectangle P_cP_mab from consumers to the firm exercising market power.) As noted above, however, provided the transfer occurs among Australian residents, and there is no leakage of economic surplus abroad, it does not constitute economic loss to the nation. Nonetheless, in the case of airports, there may be concerns about any impact on the distribution of income among passengers, airline shareholders and airport shareholders. Possible distributional effects of higher airport charges are discussed further in chapter 7.

As noted above, the Commission has focused on likely efficiency effects to guide its assessment of regulatory options. This approach assumes that 'a dollar is a dollar' to whomever it accrues, provided the recipient is an Australian resident. The Commission considers this to be an appropriate analytical approach for two main reasons.

- First, as discussed in chapter 7, there do not seem to be large differences in incomes of the broad groups affected by airport charging.
- Second, even if there were identifiable income disparities between affected groups, attempting to bring about some desired income redistribution through the restraint of airport charges would be very blunt and inefficient. Income redistribution generally is more effectively and efficiently targeted through taxation policy which takes into account the overall income or consumption of individuals (and, therefore, a measure of their overall economic welfare), and not just their purchases of airport services and/or their airport shareholdings. (See PC (2001e) for a discussion of the policy implications of structural adjustment and related distributional issues.)

Efficiency effects of constraining prices *below* efficient levels

While prices above marginal cost generate efficiency losses, prices below the market-clearing level can also create problems. This may occur when a price-regulated facility is approaching, or has reached, its capacity limit. (In figure 4.1, if capacity were restricted to quantity Q_m, the market-clearing price would be P_m. However, if the price were capped at P_c, then demand would exceed the amount being supplied (by the amount Q_mQ_c).)

Without price rationing, this excess demand necessarily would result in some other form of formal or informal rationing (for example, queuing or a quantity allocation scheme), which generally incurs efficiency costs. The magnitude of these costs

depends largely on the type of non-price rationing. Under certain conditions, the costs incurred by queuing, for example, could dissipate the entire surplus. Queuing at an airport may involve aircraft being placed in holding patterns or being made to wait on the apron/taxiways for clearance to depart, imposing large costs on airlines (and passengers).

Even with a more orderly rationing scheme, implementation costs of the system, waiting periods for slot allocation, and the likelihood that some airlines and consumers with high slot valuations will miss out, will generate efficiency losses. In other words, a regulated price below the efficient price may incur efficiency costs larger than the efficiency costs incurred when a firm prices above it. (The potential for asymmetric outcomes is amplified where investments are 'lumpy' and costs are decreasing. In this case, a regulated price set below average cost may mean that efficient investment is not undertaken. See PC (2001a) for a discussion.)

Moreover, where rationed slots are allocated (not sold) to airlines, the airlines effectively hold quotas, the value of which reflects the willingness to pay of passengers arriving or departing from the capacity-constrained airport. In other words, airlines have an incentive to price-ration seats, charging passengers (up to) the market-clearing price for accessing the airport, while they pay a lower price to the airport. In this way, the airlines, rather than their passengers, can capture at least some of the scarcity rents (equal to area P_cP_mab in figure 4.1).[4] The airlines could apply this rent in various ways, including distributing it to shareholders or using it to cover the fixed costs of providing services on more marginal routes. These issues are discussed further in appendix H.

4.3 Principles of efficient pricing of airport services

The case for price regulation rests on a comparison of the likely efficiency costs of unregulated airport pricing and the likely outcomes under price regulation. This requires an understanding of what is meant by efficient airport pricing.

Market prices typically perform several roles: they ration use of existing assets and scarce resources; they indicate the opportunity cost of using those resources; and they signal the need for investment/disinvestment in a particular activity.

4 For reasons discussed above, likely inefficiencies in the allocation system will reduce available surplus somewhat.

Decreasing costs and efficiency

Allocative efficiency, in the sense of the best use of *existing* resources, generally requires prices equal to (short-run) marginal cost. Where marginal costs are equal to or above average costs, pricing at short-run marginal cost also will ensure, in the long-run, that average total costs are covered — that is, efficient producers will receive a 'normal' rate of return on their investments, including an appropriate margin for risk.

However, as shown in box 4.2, where marginal costs lie *below* average costs for relevant ranges of output — which may be the case for Australian airports with spare capacity — marginal-cost pricing (for all units sold) will not provide an adequate return on existing assets and, of greater relevance for economic efficiency, will not provide adequate incentives for airports to undertake efficient investment, replacement or otherwise. In other words, short-run (uniform) marginal-cost pricing is unlikely to lead to efficient long-term service provision when costs are decreasing.

It is conceivable, if capacity utilisation is being approached or has been reached, that short-run marginal (opportunity) cost pricing may generate very high prices.[5] Thus, over the life of the asset, if demand increases over time and for long enough periods, costs could (eventually) be recovered by such pricing. However, this pricing model probably would not be adopted in practice; in the absence of regulation, long-term contracts, or longer-term horizons by airport operators, or just the transaction costs of continually adjusting prices, probably would smooth the peaks and raise the troughs that otherwise might exist. Moreover, such charging — which means that prices could reach very high levels in some periods — is often infeasible for political reasons.

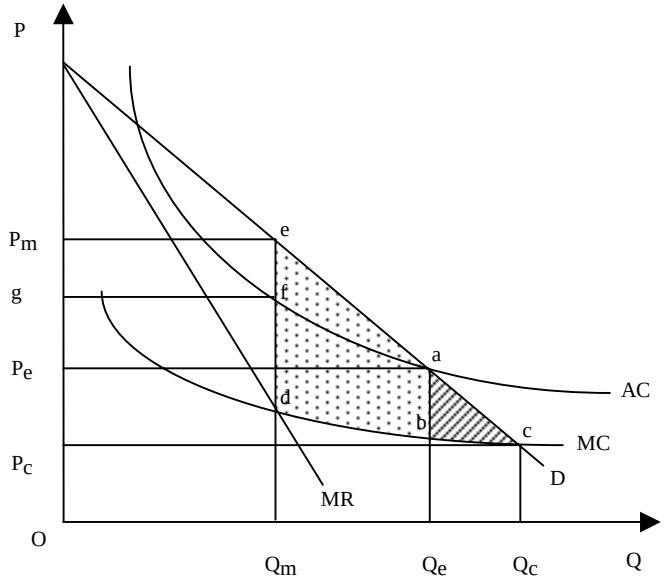
Thus, efficient pricing for firms that exhibit significant economies of scale (and which, like privatised airports, are required to be self-financing) generally must depart from all prices being set at short-run marginal cost. Though such pricing incurs an efficiency loss, compared with marginal-cost pricing (equal to the shaded area abc in figure 4.2), uniform marginal-cost pricing, in the absence of government subsidy, is not consistent with sustained provision of the facility and the services it provides. Of course, raising revenue to pay subsidies itself has efficiency costs.

5 Marginal opportunity costs will incorporate the marginal cost of supplying the service, which may increase with high utilisation levels plus, for example, congestion costs incurred by users.

Box 4.2 **Pricing with decreasing costs**

Figure 4.2 shows a firm for which, over the relevant range, marginal costs (MC) lie below average costs (AC). (D is the demand curve while MR is marginal revenue.) This means, if price is set equal to marginal costs (P_c), that the full costs of providing the service will not be covered. If the firm is required to be self-financing, then average prices charged must cover average costs. This could be achieved by levying a uniform price equal to P_e (with a consequent efficiency loss equal to abc) or levying discriminatory charges, such that those consumers with higher willingness to pay contribute more to fixed costs than those with lower marginal valuations. To the extent that marginal units are priced close to or at marginal cost, total costs will be recouped while minimising any efficiency loss.

Figure 4.2



A firm with market power will have the capacity to raise charges beyond cost-recovery levels. If constrained to set a uniform price, the firm will increase the price to the point that marginal cost equals marginal revenue (P_m). At this price, efficiency losses equal all shaded areas in figure 4.2 — that is, the excess of marginal valuation of the service over marginal cost for all units forgone (from Q_c to Q_m), with the area edba representing the efficiency loss attributable to an increase in price from P_e to P_m. At price P_m the firm earns excess profits equal to $efgP_m$, while consumers are worse off by an amount equal to the area eaP_eP_m. However, if the firm can discriminate in pricing (and it will have an incentive to do so to increase profits), then it is feasible that the marginal consumers will not be priced out of the market.

Therefore, *given a requirement to cover total costs*, efficient (average) prices typically will exceed short-run marginal cost but will not be so high as to generate persistent excess profits. (In figure 4.2, this means a price of P_e rather than the profit-maximising price of P_m or the short-run marginal-cost price of P_c). Whether

this price provides an adequate return on *existing* assets essentially is immaterial to efficiency considerations. (However, this does not mean that today's prices should be set, as a matter of regulatory policy, as though all existing assets are sunk. Indeed, such a policy may generate efficiency losses over time because firms will factor sovereign risk into their required rate of return for regulated assets.) Today's prices should signal the incremental cost of (efficiently) providing services into the future. Therefore, current prices may generate adequate returns, windfall gains or windfall losses for current investors. Kahn summarises:

> … partly because of the infeasibility of permitting prices to fluctuate widely along the SRMC [short-run marginal-cost] function … the practically achievable benchmark for efficient pricing is more likely to be a type of average long-run incremental cost, computed for a large, expected incremental block of sales, instead of SRMC, estimated for a single additional sale. This long-run incremental cost … would be based on (1) the average incremental variable costs of those added sales and (2) estimated additional capital costs per unit, for the additional capacity that will have to be constructed if sales at that price are expected to continue over time or to grow. Both of these components would be estimated as averages over some period of years extending into the future. (Kahn 1988, vol. 1, pp. 84–5)

Multi-part pricing and price discrimination

Even in the presence of large fixed costs and a requirement for a natural monopoly to be (just) self-financing, efficient levels of output may be feasible if the firm is not constrained to set uniform prices. Typically, this will require some form of multi-part pricing, such as different prices for different units sold to a customer (for example, an up-front access fee plus user charge) or different prices for different customers of the same or different goods and services (according to capacity to pay), or some combination of the two approaches. In this way, fixed costs can be allocated fully to customers, but with marginal consumers and/or marginal sales making little, if any, contribution.

As a result, the efficiency loss arising from uniform average cost pricing could in principle be reduced or even eliminated; marginal units are sold at prices equal to short-run marginal cost. The limits of such pricing are set by the transaction costs (including information costs) of doing so, and the ability of the provider to prevent arbitrage across market segments.

Airports traditionally have charged according to the maximum take-off weight (MTOW) of aircraft and this approach has been characterised as roughly amounting to Ramsey pricing.[6] However, privatised Australian airports seem to be moving

6 Ramsey pricing involves setting prices according to consumers' willingness to pay — more technically, setting prices that are inversely proportionate to the elasticities of demand of

away from weight-based charges towards passenger-based charges for terminal and even runway facilities. Passenger-based charging reduces scope for price discrimination on some margins (for example, aircraft size), but scope for discrimination remains on others (for example, between passengers travelling on different airlines or at different times of day, or between international and domestic passengers). There is solid evidence that airports do in fact discriminate in favour of marginal airlines and/or flights by offering a range of concessions and rebates (chapter 7).

Pricing of scarce slot capacity

Price differentiation may occur with respect to the timing of consumption, with different prices for peak and off-peak users, such that peak users bear a higher share of an airport's fixed costs.[7] Peak charges also signal the higher opportunity cost of using the facilities and the need for additional capacity.

At airports experiencing at least some excess demand for landing slots, weight- or passenger-based charging may send the wrong signals to airlines. A small plane or a plane with a low passenger load is charged less than a large plane or one with a high passenger load, even though the former may take up as much, or more, time on approach and on the runway. Uniform charges for runway use, possibly combined with differentiated peak/off-peak charges, would be one way of restructuring prices. Another possible form of multi-part pricing would involve the sale or auction of landing slots (or sale of leases of slots) combined with a user charge. Options for the allocation of limited airport slot capacity are discussed in more detail in appendix H.

Some participants suggested, given the demand management system (slot allocation scheme) in place at Sydney Airport, that price levels are largely irrelevant for the efficient use of that facility. Suffice to say here that although a slot management scheme can ration demand among airlines, it is not necessarily the case that airlines carrying passengers who value landing at peak periods the most obtain the slots, or that such schemes operate as efficiently as the price mechanism.

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different purchasers, or groups of purchasers, in order to minimise deadweight losses arising from prices above marginal cost, subject to the requirement to recoup full costs. Weight-based charging also may to some degree reflect differences in landing costs, though Doganis suggests the relationship of airport pricing to costs has been indirect at best (Doganis 1992).

7 Strictly speaking, peak charging is a form of price differentiation, not price discrimination if peak users generate higher capacity costs than generated by off-peak users. Price discrimination refers to different prices being charged for goods or services produced at the same cost.

Thus, as discussed in section 4.2, while market clearing is attained with quantity rationing, some economic inefficiency is likely to result.[8] Generally, price rationing of scarce slots is likely to promote more efficient use of limited capacity as well as signal more explicitly and efficiently the opportunity cost of using a capacity-constrained airport, the viability of building a new airport and the need for new investment at the facility. In these circumstances, a price yielding above-normal profits (for a limited period) would be appropriate.

Efficient pricing with locational rents and complementary demands

The single-till/dual-till issue pervaded many participants' views about appropriate pricing of airport services. Even though core-regulated airports ostensibly were privatised on a dual-till basis, aeronautical charges largely continue to reflect to a significant degree historical, single-till pricing (chapter 8).

BARA (sub. 41) and Qantas (sub. 48) submitted that efficient pricing of airport services requires rents earned in non-aeronautical activities to be used to drive down aeronautical charges. This outcome, they contended, was consistent with airports operating in a competitive environment. This is a complex issue, but for reasons explained in chapter 10 and appendix C, the Commission does not agree with their contention. In competitive markets, efficiency requires that users (on average) pay the long-run incremental cost of providing a good or service. Even in competitive markets, owners of scarce factors (such as land) generally retain scarcity rents (after general taxation).

It may be that the costs of providing aeronautical services will fall as the result of an airport exploiting non-aeronautical opportunities and this will affect the efficient aeronautical price. It also may be that an airport operator rewards passengers (and/or airlines) that generate additional custom and profits. But efficient aeronautical pricing does not necessarily require the transfer of locational rents to reduce aeronautical charges. To do so may well lower aeronautical charges below the marginal (long-run or even short-run) costs of providing those services and discourage investment in them, as well as discourage the development of valuable non-aeronautical activities.

8 Quantity rationing may be preferred to price rationing for distributional reasons. But, price rationing is likely to promote efficiency objectives better.

4.4 Principles of good regulation

Regulation is not costless. In addition to observable administration and compliance costs, regulators inevitably must make decisions based on imperfect information. This creates a risk that the costs of regulating — in terms of creating poor incentives for investment and high compliance costs — may exceed the costs of inaction.

As discussed above, efficient pricing of airport services has several dimensions. Addressing one dimension (for example, short-run marginal-cost pricing that encourages efficient use of existing assets) may distort other dimensions (for example, incentives to invest or to provide appropriate quality levels). Further, the virtual impossibility of knowing precisely what the efficient prices are forces regulators to construct prices based on measurable, often historical costs, even though these may have little relevance to opportunity costs.

As Starkie observed:

> Unfortunately, a little knowledge can be a dangerous thing; the incentive mechanisms themselves can lead to distortion and unnecessary costs … In turn, this can lead to further regulatory intervention, to complex regulation (possibly with significant compliance costs) and to increased regulatory risk that has the effect of increasing the cost of capital. At the end of the day, therefore, there is a trade-off between living with imperfect regulation or with imperfect markets. It is only when the market does not work well, when there is a clear case of natural monopoly *and* when regulation can reasonably be expected to improve matters that the regulatory option is worthwhile. Market imperfections alone are not a sufficient justification for intervention. (Starkie 2001a)

The overarching objective of regulation should be that it promotes the national interest by achieving outcomes that are more efficient than those achieved by the alternatives, including no regulation. Thus, in assessing whether new regulatory arrangements 'are needed to ensure that the exercise of any such [market] power may be appropriately counteracted', as required by the terms of reference, the Commission has assessed and compared possible efficiency and distributional outcomes with and without regulation, as well as possible outcomes under various regulatory options.

The terms of reference also specify that, to the extent it is called for:

7(b) future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power; …

7(d) prices regulation should minimise compliance costs on airport operators and the Government;

7(e) prices regulation should promote the efficient operation of airports;

7(f) prices regulation should facilitate benchmarking comparisons between airports, competition in the provision of services within airports (especially protecting against discrimination in relation to small users and new entrants), and commercially negotiated outcomes in airport operations.

These criteria (which largely mirror the Competition Principles Agreement (CPA)) suggest that any future regulation should be the minimum required to target the source of the problem and promote efficient outcomes, while being applied in a way that fosters market outcomes where feasible, imposes minimal compliance costs on all parties, and promotes transparency and competition.

In addition, in assessing the advantages and disadvantages of the current system of price regulation of airport services and possible options for future regulation, the Commission has been guided by the *Productivity Commission Act 1998* and the broad regulation review principles developed by the Office of Regulation Review to implement the CPA (PC 1998b).

Several of these principles are reflected in the terms of reference, including that regulation should:

- promote overall economic performance;
- minimise the regulatory burden on industry consistent with efficient outcomes; and
- be transparent and low cost.

Other desirable principles of regulation are that it, as far as possible, be predictable, promote certainty, and be open to scrutiny and regular review.

5 Market power of airports

The terms of reference require that, in considering the need for price regulation of airports, the Commission should take into account that 'future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power'. This chapter examines potential sources of market power of airports, and the extent to which market power exists for particular airports in Australia. Chapter 6 examines market power in particular services provided at airports in Australia. Chapter 7 considers the potential for abuse of, and the consequences of, market power.

5.1 Introduction

A firm can be said to have market power if it can profitably sustain prices above the efficient cost of supply for a significant period of time.

Most firms have some market power. The degree of market power, and the extent to which it persists, depend broadly on barriers to entry to an industry and the availability to consumers of reasonably close substitutes (which is reflected in the price elasticity of demand).

The potential negative effects of the exercise of market power on consumers or users and on the efficiency of resource allocation are the reasons that market power is cited as a rationale for price regulation of airports (chapter 4).

Preliminary issues in assessing market power

The next two sections examine the market power of airports in detail by considering barriers to entry (section 5.2) and the price elasticity of demand for a particular airport's services (section 5.3). However, some preliminary matters warrant brief discussion here.

First, the degree of market power a firm is assessed to have depends critically on how the market in which it operates is defined. The market should be defined so as to identify fully any potential sources of substitution for the firm's products or services.

Market definition requires consideration of what is being demanded (and by whom), the geographic area of the market, the functional level of the market (that is, the position of the firm in the overall supply chain), and the timeframe.

- Airports provide a number of services (chapter 2). To assess airport market power in these services, it is important to identify the services that are essential to airlines — and must be consumed as a bundle — and those that are optional, either in the quantity or quality consumed. What constitutes the 'necessary bundle' may vary depending on the airline customer. To the extent that services do not need to be consumed or supplied as a bundle, the degree of market power may differ across services. In addition, market power can vary depending on the main market segment being considered — for example, business or holiday traffic, and international or domestic traffic.
- The geographic dimension of a particular airport's market could be defined narrowly as the city in which it is located, or more broadly as the region in which it operates. The appropriate definition will vary depending on the market segment — for example, international or domestic — as well as on the particular airport being examined.
- At a functional level, consideration may need to be given to whether the market should be defined as that for transport services, airport services, that particular airport's services, or particular services at that particular airport. As noted by the ACCC (sub. 36), for this inquiry, initially it is worth considering the market for an airport's services rather than looking at particular airport services.
- The nature of the supply of, and demand for, some airport services may mean that substitution possibilities are limited in the very short term. To assess airport market power, enough time must be allowed for all market responses to be made to a price change. Professor King (ACCC, sub. 36, attachment C) suggested that an appropriate timeframe for an airport could be one to five years. If a very long time is required for the market to respond, then that in itself could indicate market power.

These elements of market definition are part of the framework for assessing market power that was recommended by Professor King (ACCC, sub. 36, attachment C). The analysis of market power that follows is consistent with his suggested framework, although the formal structure of analysis differs somewhat.

Finally, it should be noted that, even where a firm has market power, the potential for its abuse can be mitigated by factors such as the countervailing power of users and complementarities in demand. In addition, price discrimination may reduce efficiency losses that otherwise might result from the exercise of market power (chapter 7).

5.2 Airports and barriers to entry

A barrier to entry is something that gives an incumbent firm an advantage over a potential entrant. Barriers to entry can originate from supply or demand conditions, or from regulation. They need not be the result of a deliberate action by an incumbent firm.

In the case of airports, the main potential sources of barriers to entry appear to be natural monopoly characteristics and regulatory constraints.

Natural monopoly characteristics of airports

A number of conditions can generate natural monopoly (box 5.1), but the essence is that production of the good or service in question by one firm, for a given market size, is less costly than production by more than one firm. This may change over time, however, as demand and technology change.

Because of the weak direct competitive pressures faced by a natural monopolist, there may be concerns about potential abuses of market power. However, the very conditions that give rise to natural monopoly mean that there also may be efficiency benefits from having one supplier. Thus, there is an inherent tension between efficiency benefits and potential abuses of market power.

In the case of airports, natural monopoly characteristics arise from:

- investment requirements, economies of scale and economies of scope; and
- network benefits, which determine the extent to which airlines are willing to spread their services across more than one airport in any given location.

These characteristics affect industry structure, performance and the efficient pricing of airport services. However, the focus in this section is on the extent to which they create potential barriers to entry and exit, and thus hinder the entry of potentially competing airports.

Airport costs and investments

On the supply side, natural monopoly is more likely, and hence potential barriers to entry are more significant, the greater the requirement for large fixed investments and therefore the likely economies of scale, and the more significant the sunk costs or economies of scope.

Box 5.1 Conditions for the existence of natural monopoly

A natural monopoly is said to exist if, given the demand for a good, service or facility, one firm can produce a given set of outputs at a lower cost than two or more firms can. The basic conditions for natural monopoly generally relate to the nature of costs and investment — such as investment indivisibilities, economies of scale, sunk costs and, in multi-product industries, economies of scope.

- Investment is said to be *indivisible*, or lumpy, when it can be undertaken economically only in large increments. To the extent that this makes the cost of establishing a new facility higher than the cost of expanding an existing facility, this can create an advantage for an incumbent supplier.
- *Economies of scale* occur when average costs decline as output increases. Investment indivisibilities can contribute to economies of scale by increasing the fixed costs of production. Given the existence of scale economies, any potential competitor would need to capture a large market share, or increase the total market, to be competitive. However, competition may not be efficient in this setting, to the extent that one producer can supply the market at a lower cost than two.
- *Sunk costs* are costs that, once made, cannot be recouped. The extent to which an investment is sunk cannot necessarily be ascertained at the time an investment is made. Nonetheless, from the point of view of a potential entrant, the more significant the amount of immovable, industry-specific investment required to establish operations, the higher the potential sunk costs if entry is unsuccessful, and the higher the risk of investment. Exit costs effectively become an entry barrier.
- *Economies of scope* exist if it is less costly to have one firm supply a number of products or services than to have each service provided by a different firm. As with economies of scale, economies of scope can mean that it is more efficient to have only one supplier of the relevant products.

These factors may be neither necessary nor sufficient for natural monopoly. For instance, one firm may be able to produce at a lower cost than two or more firms can produce, given market demand, even if constant returns to scale (where average costs are static as output increases) or diseconomies of scale (where average costs increase as output increases) are present at the margin. Further, for a multi-product business, there could be diseconomies of scope in the production of several outputs — that is, the cost of one firm supplying all products is greater than what it would cost for firms to specialise. This could offset the impact of economies of scale in the supply of the individual product or service.

Even the coexistence of economies of scale and scope does not necessarily imply the existence of natural monopoly (Baumol, Panzar and Willig 1982), since the concept of economies of scope does not consider the possibility of two firms producing different combinations of output. Nonetheless, an appropriate rule of thumb is that natural monopoly is more likely where fixed costs are large relative to marginal costs (implying high average costs compared with marginal costs) (King 2000).

Sources: Baumol, Panzar and Willig (1982); King (2000).

The characteristics of investment and cost structures can differ significantly depending on the type of airport being considered. The discussion below considers the situation of airports, such as Australia's core-regulated airports, that are capable of servicing regular public transport (RPT) traffic in large jet aircraft.

Indivisibility of airport investment

Construction of a new airport requires the purchase of land and the development of facilities such as runways, aprons, terminals and processing facilities. To the extent that the cost of establishing facilities at new airports is higher than the cost of expansion at existing airports, this can create an advantage for an incumbent airport operator.

The most significant sources of indivisibility appear to be land and runways. The costs of procuring the large area of land required to build an airport can be very high, particularly in larger cities where vacant land close to population centres and amenities is scarce. This means that any new operator potentially would have to locate in a position that is less convenient than that of an existing operator, or try to 'create' a large area of land by buying up smaller parcels from a number of owners.[1] This latter option may lead to problems such as hold-out by existing owners. Regulatory and environmental constraints also may create barriers.[2]

The construction of a runway also involves significant indivisible investment. If a prospective airport operator wants to build an airport capable of servicing jet aircraft, it must build at least two complete runways capable of handling such aircraft (to enable landing and take-off in all wind directions). A runway is indivisible in that it cannot be built for 'a few aircraft movements'. The costs of building a runway also are significant.

Other potential sources of indivisibility include terminal navigation and instrument landing systems and lights, a full set of which is required regardless of the number of RPT flights in a day or year.

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1 Technically, contiguous land is required for infrastructure, such as runways, taxiways, aprons and some form of passenger or cargo processing facilities. Due to changes in technology, however, some services, such as check-in, increasingly may be provided at off-airport locations (chapter 6).

2 Convenience may not necessarily be related directly to distance. A new airport 200 kilometres south of Madrid, for example, will be only about 50 minutes from the city on a new high-speed rail link (Starkie 2001a). Similarly, the Eastern Distributor in Sydney has made the airport 'closer' to the city by decreasing journey times, and CityLink in Melbourne has decreased journey times between Melbourne Airport and some suburbs of Melbourne.

The indivisibilities involved in constructing other necessary assets for a new airport, such as terminals and aprons, do not appear to be as significant. Although the capital expenditure involved may be substantial, these facilities can be designed to enable incremental expansion when (and if) traffic grows. According to the Motor Trades Association of Australia Superannuation Fund (MTAA Super Fund):

> Runways … come in very large increments. On the other hand, aprons, taxiways, terminals, car parks are a little less lumpy due to the modular design nature of modern airports and airports can plan to add on a few extra aerobridges, another baggage carousel and another acre of car parking every few years. (sub. 22, p. 33)

Where, for various historical reasons (often defence related), there already are a number of airports in a given location — such as in Melbourne, which has Essendon, Avalon, Moorabbin and Point Cook airports, in addition to Melbourne Airport — a potential airport competitor may not need to build a new airport. Instead, it may be possible to change the capability of an existing airport, say from a domestic to an international airport, enabling it to compete in a new market segment.

In this case, the supply-side barrier to entry depends on how extensive the existing facilities are. For instance, if upgrading the airport would require a significant expansion of airport land, then entry barriers will be higher. Similarly, barriers to entry will be higher if a new runway (to accommodate larger aircraft) is required. On the other hand, the main investment required may be new facilities, such as passenger processing and customs facilities, in which case the extent of indivisibility, and hence the entry barrier, will not be as significant.

Economies of scale

Economies of scale (declining average costs as output increases) are more significant in industries with a relatively high proportion of fixed costs. Economies of scale can create a barrier to entry because an incumbent supplier, especially one with excess capacity, can expand production at a lower unit cost than a potential entrant could produce (unless the potential entrant can capture a significant market share or increase the size of the total market (box 5.1)).

Airports often are said to have strong economies of scale, driven by large indivisible investments such as runways. However, although there are economies of scale in the provision of runways, there are likely to be diseconomies in other areas, such as terminal facilities (passenger handling) (Betancor and Rendeiro 1999; Walters 1978). Thus, the extent of scale economies in overall airport operations depends on which effect dominates. Difficulties in maintaining access between

airside and landside facilities as airports expand also influence the overall degree of scale economies in airport operations (Starkie 2001b; Starkie and Thompson 1985).

Overall, economies of scale appear to be limited to airports with relatively low passenger numbers — some analysts claiming that falls in average costs are exploited fully at about 3–3.5 million passengers per annum (Doganis 1992; Salazar de la Cruz 1999).

Larger airports may encounter decreasing returns to scale. Salazar de la Cruz (1999), for example, found that average costs may increase past 12.5 million passengers per annum (with constant returns between about 3.5 and 12.5 million passengers). This would imply that natural monopoly could exist beyond 12.5 million passengers since, at passenger numbers just beyond this number, one airport would still have lower unit costs than two airports serving the same total market.

Although these results may not hold precisely for Australian airports (given differences in airport traffic and general economic and regulatory conditions), they are likely to be indicative of the situation in Australia.

The data on average expenses (excluding interest) presented in chapter 2 (figure 2.10) provide tentative support for this proposition. Of the core-regulated airports with international RPT services, smaller ones such as Darwin and Perth have higher average expenses than the larger international airports (Brisbane and Melbourne). Diseconomies of scale at higher passenger levels partially may explain the higher average expenses of Sydney compared with those of Brisbane and Melbourne. The lower average expenses of some of the smaller airports may reflect the lower costs of operating domestic, compared with international, airports.

Sunk costs

Sunk costs are investment costs that 'produce a stream of benefits over a long horizon but can never be recouped' (Tirole 1990, p. 308). Generally, they relate to investments specific to a firm, industry or location — which means the assets either cannot be moved, or cannot be sold to another party unless that party intends putting them to the same use, without substantial loss.

Sunk costs often are said to be significant for airports. For instance, the Board of Airline Representatives of Australia (BARA) commented:

> A number of the costs of investing in an airport are sunk once incurred. The costs of land development, runways and taxiways, aprons and so on are sunk once incurred … the size of the sunk costs are significant. (sub. 26, p. 9)

From the point of view of a potential investor in a new airport, the extent to which costs potentially could be sunk affects the risk of investment and willingness to undertake it. If an airport cannot generate sufficient traffic to be viable, then much of the airport-specific investment will not be recouped, so will be sunk. Thus, the more significant are the immovable airport-specific investments, the greater the risk. The costs of exit, then, effectively become the barrier to entry.

Most major airport investment, such as runways, taxiways, and apron facilities, is in immovable assets, so it cannot be sold for use in another location. As the Australian Council for Infrastructure Development noted:

> With an airport, which is a very, very big sunk cost investment, if the demand characteristics for your airport change, it's very hard to dig up the runway and take it somewhere else where it will be used. (trans., p. 288)

Some facilities at airports potentially may have alternative uses. Office space and some aspects of terminal facilities, for instance, could be used (if in a modified form) for general purposes. The development of business parks by some core-regulated airports (chapter 2) shows that, even though leaseholders must continue to operate airports on their land, some of the land does have alternative non-airport uses. Furthermore, speculation prior to the sale of Essendon Airport that it would be worth up to six times more as a residential development than as an airport (Davidson 2001) suggests that the opportunity cost of airport land (that is, its value in alternative uses) is not zero. (Appendix F discusses aeronautical land valuation in detail.)

However, much airport investment is in airport-specific assets, which by definition cannot be put to alternative non-airport uses.

Economies of scope

Airports provide a number of services, both aeronautical and non-aeronautical (chapter 2). Economies of scope exist if it is less costly to have one firm provide a group of services than to have each service provided by a different supplier.

In the case of airports, economies of scope appear to be most significant in the provision of aeronautical services. Economies of scope do not appear to derive from joint construction of aeronautical infrastructure, however — since, for example, aprons can be expanded incrementally, even if no changes are made to runways. Instead, economies of scope derive from the lower coordination costs of having one supplier provide access to (or coordinate the use of) several aeronautical services at the airport — that is, runways, taxiways and aprons. In addition, it may be difficult to attribute costs to specific aeronautical services.

Another possible source of aeronautical economies of scope may arise from the use of the same runway(s) by different traffic types — scheduled passenger, charter and freight services. Thus, for certain levels of overall demand, it may be less costly to have all traffic types use the same runway than to provide different facilities for each service.

There also may be economies of scope in the provision of multiple non-aeronautical services. Terminal buildings, for example, can be used for a number of purposes, from retail to office space. BARA noted:

> … there are economies of scope to the airport in providing many of these services. For example, there are economies in providing a full range of terminal services from retail space, office space and check-in areas. (sub. 26, p. 6)

These non-aeronautical economies of scope appear to derive from having one party — the airport operator — allocate a large terminal space to multiple uses (and from the benefits to users of having a number of services in the one general area). This does not mean necessarily that there are benefits from having the airport operator directly operate all the services provided in the terminal. First, the airport operator may not have the expertise to operate each component (for example, different types of retail stores). Second, most non-aeronautical costs are likely to be attributable to particular uses, so it is feasible to have different parties operate individual services. According to the MTAA Super Fund:

> The costs of non-aeronautical outputs are distinct from, and more closely attributed to, particular services than aeronautical services costs. That is, their costs can be more clearly separately identified than are aeronautical services. (sub. 22, p. 33)

Finally, some participants commented that there are economies of scope in the joint provision of aeronautical and non-aeronautical services. The MTAA Super Fund, for instance, noted that airports have:

> … strong economies of scope due to the co-location of non-aeronautical services directly relevant to the demand for air travel (car parking and rental facilities) and of services less directly related (retail outlets and light industrial property) that are attracted by the passenger flows through the airport or the proximity of customers for other services (catering for airlines, mechanical workshops for private aircraft). (sub. 22, p. 33)

Similarly, BARA commented:

> … consumers and airlines demand a range of services from an airport and … it is less costly or simply impractical for more than one provider to provide individual elements of the package. (sub. 26, p. 6)

There may be some benefits on the supply side of having all these services provided by, or at least at, the airport. For example, a large area of land is required to operate

aeronautical services but only a portion of this land is required directly for aeronautical purposes. Some of it is needed simply to meet legislative requirements, such as safety or noise restrictions in residential areas. Hence, there may be cost savings from using the land more intensively, which can be done by expanding non-aeronautical uses. However, demand attributes, and consequent revenue benefits to airports, are likely to contribute more significantly to the benefits of the joint provision of aeronautical and non-aeronautical services.

Network benefits

The above discussion suggests that some aspects of the supply of airport services give airports natural monopoly characteristics.

However, as already noted, there are examples in Australia of more than one airport in a city (due to various historical factors), yet only one is used for domestic and international passenger traffic in each city. Avalon Airport, for instance, has some of the necessary aeronautical infrastructure in place (and reasonable access to the city) to compete with Melbourne Airport. Indeed, currently it is the designated alternative airport for Boeing 747 aircraft.

This indicates that supply characteristics are not the only factors that can make one airport dominant in a location. The overall level of demand obviously is another factor. However, the network benefits that accrue to airlines and their passengers from using one large facility appear to be particularly important. In effect, there are economies of scale on the demand side.

The benefits to airlines and passengers of using one airport accrue in a number of ways. By concentrating services at fewer airports, airlines can use larger (more economical) aircraft. Passengers transferring between flights benefit from not having to commute between airports in a city. Thus, the higher the degree of interconnecting traffic, the greater the preference for using one airport in a location.

Even without significant interconnecting traffic, a particular airline is likely to prefer operating out of one airport in a city. Spreading services across airports or moving out of a particular airport could involve significant costs, including sunk costs, for an airline. These costs would relate to infrastructure (including terminals), route development, repositioning aircraft, staffing and administration.

Thus, even with a choice of two similar (uncongested) airports serving the same destination, airlines are unlikely to spread services across both. Furthermore, they are unlikely to move to another airport in the area unless charges or congestion costs increased substantially.

In addition, the most efficient way to expand services or capacity, given network benefits, typically will be through expanding capacity or duplicating facilities at the existing airport. This, of course, is subject to land availability and environmental considerations. Thus, network benefits create a more significant barrier to entry than do airport supply characteristics alone.

The impact of regulation on barriers to entry

Airports in Australia must comply with a number of regulations, both general and airport specific (chapter 3). Some of these regulations may form a barrier to entry, interacting with any barriers created by airport costs, investment, and network benefits.

Examples of the main potential regulatory barriers include:

- planning restrictions in, or near, large cities, which may constrain the construction and design of a new airport, and inhibit the development of effective access to the site (through road or rail links, for example);
- noise restrictions, which limit the ability to locate an airport near residential areas, as well as influencing the amount of land airports require around aeronautical facilities; and
- environmental legislation, such as the *Airports (Environment Protection) Regulations 1976*, made under the *Airports Act 1996*, which regulates airport activities that generate, or have the potential to generate, pollution or excessive noise (chapter 3).

Implications for market power

Clearly, there are significant barriers to entry in the provision of airports. These arise from natural monopoly characteristics that are reinforced by regulatory constraints.

That there are natural monopoly elements in the supply of airport services, combined with preferences on the demand side to use one airport in a given location, makes it unlikely that a direct competitor RPT airport would emerge in any city in Australia, given passenger volumes in most airports.[3]

[3] As already noted, although there is more than one airport in a number of capital cities in Australia, this tends to be the result of historical accident. In any case, only one airport in each city is used for RPT traffic, despite the availability of the other airports.

Considered in isolation, this would appear to give airports in Australia significant market power.

However, it is important to note that the essence of an airport's monopoly is spatial or locational in nature. A direct competitor may not emerge in the same city, but an airport in another city may provide some competition. The degree to which this type of competition could emerge can be assessed only by examining the demand characteristics of particular locations and airports. This is done in the next section.

FINDING 5.1

There are significant barriers to entry in the provision of airports. These arise from natural monopoly characteristics that are reinforced by regulatory constraints.

5.3 Price elasticity of demand for an airport's services

The 'price elasticity of demand' is a measure of the responsiveness of demand for a good or service to changes in its price; formally, it refers to the percentage change in quantity that would result from a one per cent change in price. Where the percentage change in quantity is greater than one, demand is said to be elastic; where it is less than one, demand is inelastic. A firm facing inelastic demand can increase its revenue by increasing the price of its product.

Elasticities can provide an indication of the degree of market power a firm has. High demand elasticities for a firm's product reflect competition in a market. (A firm can face a high price elasticity for its product, even where demand at the industry level is relatively inelastic.) Firms facing low elasticities of demand for their product have market power since they can increase their price without significant substitution away from their product.[4]

Framework for assessing the elasticity of demand for airport services

As noted in chapter 2, the demand for airport services is a 'derived' demand; indeed it can be considered a 'derived-derived' demand. It is derived from the demand for airline services, which in turn is derived from the demand for travel for business

4 That said, if a firm sets prices to exploit fully its market power, it will increase prices until the point at which demand becomes elastic. Thus, the demand elasticity measured from a 'monopoly price' would give an erroneous indication of the degree of market power held. Further, if the demand of a firm (that is unregulated) is estimated to be price inelastic, this could imply that market power is not being fully exercised. Hence, it could suggest that there may be some constraint on the exercise of market power (assuming the elasticity is estimated correctly).

meetings, holidays, visiting friends and relatives (VFR), migration, cargo handling and so on.

The analysis here considers the demand for the services of a particular airport, which may be more elastic than the demand for airport services in general. The discussion focuses on passenger services since much of the freight passing through RPT airports is carried on passenger flights (Melbourne Airport, sub. 7). Nonetheless, where appropriate, dedicated freight services (where freight is not carried in passenger aircraft) are discussed separately.

Since the demand for an airport's services is a derived demand, its elasticity will be influenced by four factors:

- the elasticity of demand for air travel to that destination;
- alternative sources of supply for a particular airport's services;
- the proportion of airfares (or freight charges) and airline costs that airport charges comprise; and
- the elasticity of supply (supply responses) of other input providers, such as airlines (box 5.2).

The focus with respect to airports generally is on the third factor — that is, the (low) proportion of airfares and airline costs that airport charges comprise on average (discussed below). The lower the proportion of costs that a particular input (such as airport services) comprises, the lower the elasticity of demand could be expected to be, all other things being equal (box 5.2).

However, to the extent that the elasticity of demand for the final product is high, or that substitutes for the input (in this case, airport services) exist, the elasticity of demand for the input will be higher. This does not mean necessarily that demand for airport services will be highly price elastic, but that it could be higher than would be suggested by its cost share alone.

In addition, different segments in the market may vary in their price responsiveness. The overall demand elasticity for the airport's services will be a composite of these different market segments, appropriately weighted. The question is which customers or segments drive the behaviour of the airport and its ability to increase prices or otherwise exercise market power. Further, estimated elasticities generally will be measured at a point on the demand curve. Less appears to be known about the shape and/or slope of the demand curve for air travel. Elasticities could increase significantly as prices increase, which could constrain the scope for any large changes in airport prices.

Box 5.2 **Conditions for assessing price elasticities of derived demands**

Four conditions influence an assessment of the elasticity of a derived demand. Following Stigler (1969), the service for which there is a derived demand — as is the demand for airport services — is referred to as a 'productive service'.

Elasticity of demand for the final product or service

The elasticity of demand for a productive service will be higher the larger the elasticity of demand for the final product. In this case, any given increase in the cost of the input (and hence any given impact on final prices) will have a greater effect on final output.

Availability of alternative sources of supply of the service

The demand for a productive service is more elastic the more easily other services may be substituted for it (that is, the higher the elasticity of substitution). The elasticity of substitution is defined formally as the percentage change in the ratio of two productive services consumed resulting from a percentage change in the relative prices of the services. Given that an airport is essential to operate air services, the only possible substitute for an airport is another airport. Nonetheless, airlines may have some scope to vary the amount of airport services consumed by consolidating services.

Proportion of total cost that the price of the productive service comprises

The lower the price of the service relative to the total cost of the final product (that is, the smaller the proportion of the total cost it comprises), the lower is its price elasticity. Intuitively, few people are discouraged from buying a final product if the price of an input that is a small part of total costs increases (even if its price rises significantly and the cost is passed on fully). However, this factor can be overshadowed if there are significant alternative sources of supply for the input. Formally, for this condition to hold, the elasticity of demand must exceed the elasticity of substitution.

Elasticity of supply of other inputs

The demand for the productive service will be more elastic the more elastic is the supply of other productive services. The maximum price that a particular input provider can receive (for a given level of production) is limited by the amount that consumers are willing to pay for the final good, and the price that other input providers require for their services. Thus, if the price charged by one input supplier increases, then either the price of the final good must rise and/or other input suppliers must accept a lower price for their services. The lower the ability of other input providers to accept a lower price (because they have a high elasticity of supply, or operate under conditions of decreasing costs), the greater is the adjustment required by consumers (that is, the higher is the change in the price and, hence, demand for the final product).

Source: Stigler (1969).

The rest of this section considers the importance of each factor in influencing the elasticity of demand for a particular airport's services. As for section 5.1, the

approach adopted here is consistent with the framework outlined by Professor King (ACCC, sub. 36, attachment C), though its structure differs.

Elasticity of demand for air travel to a particular destination

The higher the elasticity of demand of air travel to a particular destination, the higher the likely elasticity of demand for a particular airport's services.

Reliable estimates of price elasticities for passenger air travel are difficult to obtain. As noted by Oum, Waters and Yong (1992), elasticities differ depending on fare class (business, economy, discount), as well as distance. Problems obtaining data, however, mean that only aggregate price elasticities tend to be estimated. (One exception is a recent Australian study (Battersby and Oczkowski 2001), which attempts to estimate demand elasticities by market segment and is discussed further below.) Calculated elasticities also tend to be based on some average estimated fare, rather than actual prices paid, further distorting estimates.

As a result of these problems, estimates vary widely, ranging from -0.4 to -4.51, with most falling between -0.8 and -2.0 (Oum, Waters and Yong 1992). Although these results are not unambiguous, the general conclusion seems to be that business travel is relatively inelastic, while holiday travel is elastic.

Battersby and Oczkowski (2001) focused on demand elasticities for domestic air travel in Australia. They found that elasticities differed across the four routes examined, as well as across airfare classes. The estimated price elasticities tended to be lower than those found in other studies — and were, in fact, inelastic for most routes and fare classes — but economy fares tended to be the most elastic. Counterintuitively, there did not appear to be a significant difference between the elasticity of demand for business compared with discount fares. As the authors noted, the relatively fixed supply of discount fares, particularly during the time under consideration (1992–1998), partly could explain this result.

On the other hand, BARA noted that 'available evidence suggests that demand for air travel is relatively elastic' (sub. 26, p. 11). This point was echoed by Qantas, which 'believes that air services have a reasonably high price elasticity' (sub. 48, p. 18). Virgin Blue also argued that:

> Virgin Blue has proven beyond doubt that more people fly if you lower the price, even by a few dollars. It's as simple as that. (Huttner 2001)

The price elasticity of demand for international air travel to Australia seems to follow broadly the patterns found in the international studies. According to the then Bureau of Transport and Communications Economics (BTCE 1995), foreign leisure

travellers appeared to be more price sensitive than business travellers. The elasticities also varied depending on the country of origin of the travellers. The estimated price elasticities (between -0.23 and -1.19 for leisure travellers, and inelastic or zero price elasticity of demand for business travellers) tended to be towards the lower end of the range of elasticity estimates found in the other studies cited in the above discussion.

The available elasticity estimates do not, however, indicate the potential price responsiveness of travellers to all particular destinations in Australia and are of somewhat limited use in assessing the elasticity of demand for particular airports. Although Battersby and Oczkowski (2001) examined elasticities for different routes, they did so for four routes (covering three airports) only, and the model was based on data between 1992 and 1998 (that is, before the entrance of Impulse and Virgin Blue).

Given this, it can be more informative to examine qualitatively the factors that influence the elasticity of demand for air travel to a particular destination. Broadly speaking, this elasticity will depend on the relative attractiveness of the destination and the relative attractiveness of air travel to that destination compared with other transport modes. The impact of these two factors will vary according to the market segment being served (domestic or international; business or leisure), and whether the service is freight or passenger transport.

Demand substitution possibilities: alternative destinations for passenger travel

Given that the demand for air travel is derived from the demand for business trips, holidays and so on (chapter 2), several factors influence the decision to travel to a particular destination. These include the tourist attractions and amenities in a region, business opportunities, friends and relatives, and the cost of travel (including the cost of the journey and living costs while there).

The primary purpose for travel is likely to influence the relative importance of each factor and thus the extent to which travellers are willing to substitute one destination for another, or change their frequency of travel. In particular, holiday makers (both domestic and international) are more likely to have discretion over their destination than are those visiting friends and relatives or travelling for business purposes.[5] Gold Coast Airport commented:

> Competition can come in several ways for a leisure destination such as ours … the tourism market is reasonably fickle. (trans., p. 373)

[5] Conference organisers have much more discretion over destination. Thus, this segment of the business market is likely to be more price elastic than the general business market.

Other regions within Australia and, in some cases, overseas can be alternative destinations for Australian and international holiday travellers. As noted by the ACCC:

> … both international and domestic tourists might substitute *destination* on the basis of cost differences. For example, a tourist may decide to visit Coolangatta rather than Fiji, if the cost of doing so is substantially lower. (sub. 36, pp. 62–3)

Reported changes to travel plans following the events of September 2001 (chapter 2) show that travellers are willing to change holiday destinations (although these changes were not influenced primarily by price factors).

In addition, even if international holiday travellers have made the decision to come to Australia, they have choices about which regions they visit within the country, and about their points of arrival and departure.

Though often seen to be fairly inelastic market segments, there also are some substitution possibilities for travellers in other categories. For instance, people visiting friends and relatives may have little choice over destination but do have a choice about frequency (and possibly transport mode) and therefore may be quite price sensitive. Business travellers also may change the frequency of visits (or choose alternative modes, as discussed below). If business travellers ultimately are selling their products into competitive export markets, then they are likely to be more price sensitive.

The potential price responsiveness of travellers, both tourists and those visiting family and friends, was highlighted by Tourism Tasmania:

> … Tourism Tasmania's own TVS Special Fares Survey … covered the period in September and October 2000 when $55 fares were placed on Melbourne to Tasmanian ports as well as most other city pairs across the country. The survey showed that 34 per cent of the fares to Tasmania were purchased by visitors who had no plans in the next two years or more to visit Tasmania and that the primary reason for purchasing the tickets for 92 per cent was the price of the ticket. Visiting friends and relatives was the motivation of 53 per cent of those travellers, with the remainder being predominantly leisure focused. (sub. 13, p. 1)

Overall, although each market segment has some substitution possibilities, these possibilities are higher for holiday travellers. Therefore, destinations with a greater proportion of leisure traffic are likely to be more susceptible to competition from other destinations. On the other hand, the higher the proportion of business traffic, the less price sensitive travellers to a destination are likely to be (all other factors being equal).

As can be seen in table 5.1, the proportion of interstate holiday travellers varies greatly across regions serviced by Australia's core-regulated airports.

Table 5.1 **Primary purpose of visit, interstate overnight visitors in Australia, 1999[a]**

Destination	*Business*[b]	*Visiting friends and relatives*	*Holiday/leisure*	*Other*
	%	%	%	%
New South Wales[c]	**20**	**32**	**43**	**6**
Sydney	33	34	28	6
Victoria	**34**	**30**	**34**	**4**
Queensland[d]	**22**	**30**	**45**	**3**
Brisbane	32	32	30	6
Gold Coast	11	24	62	3
Tropical North Queensland	21	23	53	3
South Australia[e]	**36**	**25**	**30**	**13**
Western Australia	**40**	**26**	**37**	**1**
Tasmania[f]	**18**	**22**	**56**	**4**
Northern Territory	**24**	**13**	**55**	**6**
ACT	**30**	**34**	**32**	**4**

a Percentage of all interstate overnight travellers to the destination who go there for each purpose. Overnight visitors are travellers aged 15 years and over who do not arrive and depart within the same day. Unless otherwise stated, the source is BTR (2000b). Rows may add to more than 100 per cent because some people reported more than one purpose for their visit. **b** 'Business' includes conferences. **c** NSW data are from Tourism New South Wales (2001) for 1999-00, and refer to domestic (intrastate and interstate) visitors. Main purpose of visit does not appear to differ significantly between domestic and interstate categories (though the proportion of business travel is higher for interstate visitors). **d** Queensland data are from Tourism Queensland (2000a–d), and refer to domestic (intrastate and interstate) visitors. Main purpose of visit does not appear to differ significantly between domestic and interstate categories. **e** SA data are taken from SATC (2001) for 2000. 'Other' includes a 'not asked' category. **f** Tasmanian data are from Tourism Tasmania (2001) for 2000.

Sources: BTR (2000b); SATC (2001); Tourism Queensland (2000a–d); Tourism New South Wales (2001); Tourism Tasmania (2001).

In general, the eastern mainland States, as well as South Australia and Western Australia, have higher proportions of business and VFR travellers compared with the other destinations considered.[6] Also, there are differences in the main market segments going to different regions within these States. For example, the proportion of business traffic to Brisbane is significantly higher than to the Gold Coast and Tropical North Queensland. Likewise, there is more business traffic travelling to Sydney than the NSW average. Similarly, in the Northern Territory, business or VFR travellers account for a greater proportion of visitors to the 'Top End' than of visitors to the 'Centre' region (NTTC 2000).[7] It is likely that such patterns (that is, a

6 The data presented relate to overnight travellers (that is, travellers who do not arrive and depart within a day), so the proportion of business travellers is understated.

7 NTTC (2000) provides data on the main purpose of visit of all visitors to the Northern Territory (not separated by domestic and international travellers), by region visited in 1999-00. Overall, of visitors to the 'Centre' region, 77 per cent went for holiday/leisure purposes and 7 per cent

lower proportion of leisure traffic in capital cities) would be repeated in the States for which the data are not available.

This suggests that substitution possibilities and hence demand elasticities for destinations such as Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney will be lower than for the other destinations considered — unless business frequency is price elastic.

This conclusion effectively assumes that the mean elasticity (that is, an elasticity based on the main market segments served) is an appropriate measure of price sensitivity. If, however, most marginal travellers come from elastic market segments, then an increase in prices will result in a larger quantity response than suggested by an unweighted average elasticity. That said, if these elastic portions are a very small part of the market, they are unlikely to affect the overall elasticity significantly.

International travellers primarily come to Australia for a holiday (table 5.2). The proportion of foreign business visitors tends to be low, with the highest levels around 14 per cent for Melbourne and 12 per cent for Sydney in 1999. Melbourne also had the highest proportion of international VFR visitors in that year, followed by Sydney, Brisbane and Canberra. Differences in the purpose of visit across destinations within a State do not appear to be significant. Overall, since holidaying is the dominant reason for international travellers visiting Australia, international travellers may be more price sensitive as a group than domestic travellers. However, the fact that international visitors to Australia have little choice but to fly may reduce their price elasticity of demand for air travel.

The importance of local population size and density

The importance of the local population in encouraging travel to (and from) a destination is highlighted by the importance of business and VFR travellers to some destinations. Where the local population is relatively large, it is more likely that travel to the destination will comprise predominantly the less price responsive business and VFR markets (for a given level of modal and airport substitution). Thus, the Queensland Department of Tourism, Racing and Fair Trading argued:

> Sydney serves as a gateway to Australia's largest catchment area for high yielding premium fare paying passengers. Sydney also has geographic advantages in that it acts as a conduit to funnel traffic to and from Australia's densest population centre. The

each went for VFR and business purposes. Of visitors to the 'Top End', 55 per cent went for holiday/leisure purposes, 17 per cent went for VFR, and 14 per cent went for business purposes. The proportion of international visitors was higher for the 'Centre' than for the 'Top End'.

traffic volume, premium revenue mix of business and leisure traffic coupled with significantly greater frequency and volume of air services gives Sydney significant advantages over Brisbane in terms of obtaining favourable scale, scope and revenue efficiencies, for passenger air transport. (sub. 6, p. 2)

Table 5.2 **Primary purpose of visit, international visitors to Australia, 1999[a]**

Destination	*Business*[b]	*Visiting friends and relatives*	*Holiday*	*Other*
	%	%	%	%
New South Wales	**12**	**16**	**59**	**13**
Sydney	12	15	59	13
Victoria	**13**	**20**	**52**	**14**
Melbourne	14	20	53	14
Queensland	**5**	**12**	**73**	**10**
Brisbane	9	16	62	14
Gold Coast	3	7	84	5
Tropical North Queensland	2	7	82	8
South Australia	**8**	**18**	**59**	**15**
Adelaide	7	18	61	13
Western Australia	**7**	**27**	**52**	**13**
Perth	8	26	53	13
Tasmania	**10**	**18**	**52**	**20**
Hobart	6	20	59	15
Northern Territory	**2**	**9**	**80**	**9**
Darwin	2	9	76	13
Alice Springs	2	8	81	9
ACT	**10**	**13**	**64**	**13**

a Percentage of all international travellers (aged 15 years and over) to the destination who go there for each purpose. These figures differ from those of the ACCC (sub. 36, p. 63). The ACCC data relate to inbound traffic on international flights at the respective airports. The data in this table are based on BTR (2000a), which is the result of surveys conducted as visitors left Australia's international airports. **b** 'Business' includes conferences.

Source: BTR (2000a).

Demand substitution possibilities: alternative modes for passenger travel

People potentially can travel to a given destination in a number of ways — by bus, train, ferry, or car, as well as by air (although air is really the only practicable way for international arrivals to travel to their first Australian destination). The potential for modal substitution should be considered broadly — for example, advances in technology mean that teleconferencing or videoconferencing provide a good alternative to some face-to-face business meetings.

The greater the attractiveness of modal substitutes for travel to a particular destination, the higher will be the price elasticity of demand for air travel (and hence the higher will be the price elasticity of demand with respect to airport charges).

Factors that influence the substitutability of travel modes

Factors that influence the decision over mode include the proposed length of stay, the distance to be travelled, and the relative cost of each mode (both in financial terms and in terms of convenience and the time taken to travel). As with the possibility for destination substitution, the primary purpose for a visit is likely to influence the relative importance of each factor and thus the extent to which travellers are willing to substitute modes. Of course, the first decision to be made by potential travellers, regardless of the purpose of travel, is whether to go at all, or how often to go.

Several inquiry participants argued that the modal alternatives to air travel generally are weak, mainly due to time savings associated with air travel. The ACCC, for example, noted the particular importance of time in determining preferences for business air travel:

> For business travellers the convenience of air travel is vastly superior to the alternatives. It is likely that for this customer group, location is primarily determined by factors other than airport pricing, and that time constraints are a critical element of the travel decision. In such circumstances, there are no viable substitutes to flying to a particular destination; the choice is simply between travelling and not travelling. (sub. 36, p. 62)

Though not travelling within a particular day is not always a viable alternative for business travellers, business is not totally unresponsive to costs. It can minimise the use of air travel in various ways — for example, by scheduling intercity meetings so fewer trips are required, or by teleconferencing or videoconferencing.

Although videoconferencing can save time and cost less than face-to-face meetings, it will not always be an adequate alternative. Its adequacy as an alternative will depend on the nature and expected duration of meetings. It is unlikely to be adequate if a large group of people who are not well acquainted need to discuss sensitive issues, for example. On the other hand, a smaller better-acquainted group discussing routine issues is more likely to find videoconferencing a viable option.

The potential substitutability of videoconferencing for face-to-face meetings has been highlighted since September 2001. Concerns about the security of travel and problems obtaining domestic flights saw many businesses turn to videoconference providers (Heasley 2001; Skulley and Bolton 2001). Although partly a response to

non-price factors, it indicates the ability of business to use videoconferencing in some cases. The long-term impact on demand for videoconferencing is unclear. However, continuing improvements in the technology and its cost effectiveness mean that videoconferencing may grow in importance in the future.

Virgin Blue argued that time also was an important factor for leisure travellers:

> … the time to travel between the major airline destinations is significantly longer by car, bus or train than by aircraft (12 hours compared to an hour and [a] half for example) … For leisure travellers, the current low fares compare favourably with other forms of transport, and any overnight stays relating to the time taken by other forms of transport contribute to the total cost of the holiday. Accordingly, other forms of passenger transport are not readily substitutable for aircraft travel. (sub. 30, p. 12)

Assessing the time taken to travel by air, however, should include the journey time from the initial departure point to the origin airport, as well as the time taken to travel between the destination airport and the final destination point. In the case of travel between Canberra and some suburbs of Sydney (particularly southern Sydney), for example, it may be more time effective (even for business travellers) to travel by car.

In any case, leisure travellers are likely to be far more sensitive to price than to time, especially compared with business travellers.

- Holidays tend to be longer than business trips so time may not be as critical for some holiday travellers. They may, therefore, place a greater emphasis on the generally higher direct cost of air travel.
- The journey to a final destination often can provide value to holiday travellers who visit attractions along the way. This means that the extra time taken to travel using modes other than air may not be viewed purely as a cost.
- The use of a car when at the destination often is valued by holiday travellers. Thus, driving to a holiday destination may provide benefits to counteract the extra time taken to travel.

Nonetheless, the further the distance between destinations, the less attractive are alternative travel modes. The ACCC noted two reasons for this:

> Firstly, the difference in journey times between air transport and the alternatives increases rapidly. Secondly, the cost differential between air transport and any alternative mode of transport may narrow as the distance increases. (sub. 36, p. 63)

Data provided in BTR (2000b) and reproduced in table 5.3 show that interstate overnight business travellers are far more likely than holiday/leisure or VFR travellers to use air transport.

Table 5.3 **Transport used by overnight interstate visitors in Australia, by purpose of visit, 1999[a]**

	Holiday/leisure	*Visiting friends and relatives*	*Business[b]*	*Other*	*Total*
	%	%	%	%	%
Air	34	35	70	17	48
Private vehicle	58	60	26	72	52
Other	16	11	8	17	13

a Percentage of travellers going for each purpose that use each mode. Columns add to more than 100 per cent because some people reported more than one mode and purpose for visit. **b** 'Business' includes conferences.

Source: BTR (2000b).

For international travel to Australia, there is little option but to fly. The only real choice about travel mode for international visitors is how to travel between various regions within the country.

Alternative travel modes to specific Australian destinations

Overall price elasticities of demand for air travel incorporate factors such as modal substitution. However, given the variety of factors influencing the choice of travel modes, the price sensitivity of travellers attributable to modal substitution is likely to differ across Australian cities.

Since holiday travellers are likely to be more price elastic than business travellers, one way to assess the potential competition that air faces from other travel modes is by examining which market segments dominate travel to a particular region. Thus, using the information in table 5.1, it would appear that air travel is likely to face more intermodal competition (and greater price elasticity of demand) in destinations such as the Northern Territory, the Gold Coast and Tropical North Queensland, where holiday travellers dominate.

However, even for holiday travellers, the viability of modal substitutes is dependent on factors such as the distance between origin and destination. Thus, examining modal choice to particular destinations can give an idea of the perceived substitutability of travel modes (table 5. 4).

As illustrated in table 5.4, air travel comprised no more than around 30 per cent of total interstate overnight trips made to New South Wales and the ACT. The dominance of private vehicle travel for those visiting the ACT may reflect the high proportion of visitors from Sydney (and surrounding areas of New South Wales). As noted above, for these visitors, the time difference between air and road travel may be relatively low (and may even favour private vehicle in some cases).

Interstate visitors to South Australia were also slightly more likely to travel by private vehicle than by air in 2000. The use of air travel to Adelaide subsequently may have increased following the introduction of Virgin Blue services (but before the reduction in Ansett services). However, given that Virgin Blue's passengers are likely to have more price-sensitive demands, this would not have increased the market power of Adelaide Airport.

Table 5.4 **Mode of travel to Australian States by overnight interstate visitors, 1999[a]**

Destination	*Air*	*Private vehicle*	*Other*
	%	%	%
New South Wales	32	59	10
Victoria	49	44	10
Queensland	55	41	11
South Australia[b]	40	51	12
Western Australia	82	13	21
Tasmania[c]	78	na	22
Northern Territory[d]	53	37	9
ACT	20	71	9

a Percentage of total overnight interstate visitors to the State using each travel mode. Overnight visitors are travellers aged 15 years and over who do not arrive and depart within the same day. Unless otherwise stated, the data source is BTR (2000b). Rows may add to more than 100 per cent because some people reported more than one mode. **b** SA data are taken from SATC (2001) for 2000. 'Other' includes a 'not asked' category. **c** Tasmanian data are from Tourism Tasmania (2001), and refer to 2000. **d** NT data are from NTTC (2000) for 1999-00. 'Private vehicle' for the Northern Territory incorporates 2-wheel drive and 4-wheel drive vehicles, which may include hire cars, and also includes 'other road transport' (excludes coach, which is included in 'other' in this table). **na** Not applicable.

Sources: BTR (2000b); SATC (2001); NTTC (2000); Tourism Tasmania (2001).

On a whole-of-State basis, air travel is the dominant mode only to Western Australia, Tasmania and, to a lesser extent, the Northern Territory and Queensland. However, as shown in box 5.3, the relative importance of air travel differs according to the region being considered in Queensland. In particular, the proportion of visitors travelling by air to Tropical North Queensland is higher than to Brisbane or the Gold Coast.

For Tasmania, however, sea travel often is seen to provide a viable alternative to air travel. The ACCC, for instance, argued that:

> … ferry services connecting Melbourne and northern Tasmania are an attractive alternative to flying (for many visitors). In this case the demand side substitution possibilities are much greater than for other capital city airports. (sub. 36, p. 64)

Further, as discussed below, competition between airports in Tasmania is likely to be more significant than in other destinations.

Box 5.3 **Mode of arrival of visitors to selected Australian destinations**

The tourist bureaux in some States publish breakdowns on mode of arrival, either by domestic and international visitors, or by regions within the States. Examples of these are provided below.

Northern Territory

In 1999-00, 65 per cent of all visitors to the Territory arrived by air, 24 per cent by private vehicle, 7 per cent by coach, and 4 per cent by rail. As shown in the table below, the relative proportions using each mode differed, sometimes significantly, between domestic and international travellers. In particular, a far greater proportion of domestic visitors than of international visitors travelled by private vehicle. The overall proportions appear to be similar for the 'Centre' and 'Top End' regions. (NTTC 2000)

Mode of entry	*Interstate visitors*	*International visitors*	*Total visitors*
	%	%	%
Air — domestic	52	59	56
Air — international	1	15	8
Coach	6	7	7
Private vehicle[a]	37	9	24
Rail	2	6	4
Other	1	1	1

a Private vehicle includes 2-wheel drive vehicles, 4-wheel drive vehicles and 'other road transport', which may include hire cars.

Queensland

In 1999, 71 per cent of domestic (including intrastate) visitors to Queensland travelled by private vehicle, 21 per cent by air and 4 per cent by rail (Tourism Queensland 2000c). The proportion of interstate visitors who travel by private vehicle is lower than for the domestic total. However, differences across regions are likely to be similar for interstate and intrastate travellers. Data for three regions are illustrated below (Tourism Queensland 2000a, b, d).

Mode of entry	*Brisbane*	*Gold Coast*	*Tropical North Queensland*
	%	%	%
Air	30	20	43
Private vehicle	58	69	47
Other[b]	12	11	10

b 'Other' includes rail (7 per cent) for Brisbane; bus/coach (5 per cent) for Gold Coast; and rented vehicle (5 per cent) for Tropical North Queensland.

Tasmania

Approximately 78 per cent of travellers to Tasmania arrived by air in 2000: 44 per cent arrived at Hobart Airport, 24.7 per cent at Launceston, 5.7 per cent at Devonport, and 3.1 per cent at Burnie (Wynyard). The remaining 22 per cent arrived by sea (most of those going to Devonport with TT-Line). (Tourism Tasmania 2001)

Sources: NTTC (2000); Tourism Queensland (2000a–d); Tourism Tasmania (2001).

In the case of the Northern Territory, the relative importance of air travel differs significantly between domestic and international tourists (box 5.3). A far greater proportion of domestic visitors than of international visitors travelled to the Northern Territory by private vehicle.

The response of travellers to the reduction of Ansett services in late 2001 may provide some additional evidence of potential modal substitutability. Anecdotal evidence suggests that holiday makers were more willing than business travellers to change transport modes (although business travellers made more use of videoconferencing) (Heasley 2001). On the other hand, some holiday makers decided to take holidays closer to home so they could drive to their destination (indicating destination substitution for leisure travellers) (Innis 2001). Gold Coast Airport submitted that:

> The surveys indicated that because of Gold Coast's proximity to the major east coast population centres, many visitors who had booked flights and accommodation chose to drive or use other forms of transport to complete their holidays …
>
> Surveys undertaken by other State and national tourism organisations indicate that the experience on the Gold Coast was not evident at the more distant tourism centres such as Cairns. (sub. DR58, p. 5)

However, what can be inferred from these responses is limited by the sudden and 'abnormal' nature of the events.

- In particular, with significantly diminished air capacity, initial traveller behaviour (particularly in terms of increased rail and coach bookings) was dominated by those needing to return home. This would tend to overstate the apparent substitutability of modes compared with what would be observed in more normal circumstances.
- The large number of holiday cancellations to certain destinations may indicate:
  - the inability to change travel modes at short notice — in which case, potential modal substitutability may be underestimated if, in the medium to longer term, the length of holidays can be varied to accommodate the use of slower transport modes; or
  - the inherent unattractiveness of using other travel modes to those destinations — in which case, modal substitutability would be more accurately reflected in the number of cancellations. Gold Coast Airport noted that 'as Gold Coast did receive an increase in new short term bookings during the holiday period this indicates it could have benefited at the expense of the more distant destinations because of its proximity to the main population centres'. (sub. DR58, p. 5)

Demand substitution for dedicated freight traffic

As with passenger traffic, demand substitution for dedicated freight services (that is, where freight is not carried in passenger aircraft) can be looked at in terms of destination and modal substitution. And, as with passenger traffic, the substitution possibilities are likely to differ between international and domestic freight.

For international freight, the only possible modal substitute is shipping. For the transport of domestic freight, on the other hand, road, rail or sea may be viable alternatives.

Not all freight is amenable to transport by air; shipping is the only viable alternative for some types of international cargo, for example. However, the freight that is transported by air tends to be highly time-sensitive. As Virgin Blue noted:

> The means of freight transport is determined by the required delivery time and characteristics of the freight item. Air transport is higher cost than other forms of transport, reflecting its short delivery time. Highly time sensitive freight is typically only suitable for air transport. (sub. 30, p. 12)

Nonetheless, BARA noted:

> For some domestic overnight freight services road and rail might provide a viable alternative. (sub. 26, p. 7)

Apart from the time factor, the relative viability of other modes depends on the extent of infrastructure for other modes, as well as the location of production of the goods to be freighted. For example, in Tasmania there are sea freight terminals at Hobart, Launceston and Burnie. In addition, it was noted by Hobart Airport (and supported by Launceston Airport (sub. 35)) that:

> … Tasmanian salmon producers use both sea and air transport. Our advice is that it costs $2 per case less to transport salmon by road-sea freight from Hobart to Melbourne, than by air. The other advantage of road-sea freight is that it is a seamless service from say the salmon factory at Dover in the south of Tasmania, across Bass Strait, to the markets of South Australia, Victoria and New South Wales. (sub. 11, p. 5)

Thus, although the substitutability of transport modes for freight is likely to be relatively low, substitution is possible.

The possibilities for destination substitution appear to be lower for freight than for passenger traffic. To the extent that domestic air freight is generally time-sensitive, it needs to be sent by relatively direct routes to a required destination.

In terms of destination substitution of international freight, excessive transport costs may mean that some goods that otherwise would be transported to (or from) Australia may be sent elsewhere (or kept within the country). To the extent that

freight needs to be sent to Australia, the potential for destination substitution is limited to the substitution of ports within Australia. That is, freight could be sent to different airports within Australia, and then freighted by other means (such as road) within the country, depending on the relative costs of doing so. For example, Melbourne and Sydney appear to be viable substitutes for transporting exports originating in Adelaide in some circumstances. A significant proportion of air freight generated in South Australia — high value and perishable freight — goes to Sydney and Melbourne airports (SA Government, sub. to PC (1998a)).

The extent to which alternative airports can compete for air freight (both international and domestic) is discussed below.

Alternative sources of supply for a particular airport's services

Given that a decision is made to travel (or send freight) to a particular destination, some form of airport service is required by airlines (and their users). Substitution possibilities for a particular airport's services may be available to airlines in terms of using larger planes or changing the frequency of landings at a particular airport (and, therefore, shifting some operations to other airports). Virgin Blue highlighted the potential to substitute airports when, in relation to charge increases at Coolangatta Airport, it noted that it:

> … will have no option but to operate its new Boeing aircraft on routes where the relevant airports act as responsible members of the community instead of as opportunistic monopolies. (Huttner 2001)

Nonetheless, the main potential source of input substitution appears to be the availability of a proximate airport. How close a particular airport must be to be considered proximate needs to be examined on a case-by-case basis.

Supply substitution possibilities for passenger traffic

For reasons discussed in section 5.2, there is unlikely to be direct competition in a particular city from another airport for passenger traffic because the core-regulated airports are the only RPT airports in their city. Nonetheless, airports in nearby locations may be relatively good substitutes in some cases. The Hon. Ralph Willis, the then Treasurer, noted that Cabinet set down as a condition of sale that 'there would be appropriate cross-ownership controls so that there would be effective competition between airports and between airport users' (Willis 1994, p. 3). This suggests that there is at least some perceived potential for competition among airports. To the extent that this is the case, the market power of these airports would be diminished.

Determining the potential substitutability of airports requires consideration of the geographic dimension of the market (section 5.1). What constitutes a proximate airport will differ according to the market segment being examined (business compared with holiday; domestic compared with international).

As noted with respect to modal substitution, although time may be important for holiday travellers, for many of them it may not be the primary consideration. Thus, domestic holiday makers are likely to have a more flexible view than business travellers of what constitutes a proximate airport. This suggests that airports in destinations with predominantly domestic holiday (or even VFR) travellers are likely to be more susceptible to competition from nearby airports.[8]

As discussed above, Tasmania, the Gold Coast, Tropical North Queensland and the Northern Territory receive high proportions of holiday traffic. Of core-regulated airports serving these regions, it appears that Launceston, Hobart, Coolangatta and Alice Springs face effective competition from other 'nearby' airports.

Hobart and Launceston face a potentially high degree of competition from each other. They are just over two hours drive apart, making them relatively close destinations for holiday — and even VFR — travellers, who are their main market segments. In addition, since most holiday makers to Tasmania visit more than one city in the State (Tourism Tasmania 2001), and many travel around Tasmania in cars, the particular point of arrival is less important than it may be in other States. Hobart and Launceston airports also face some potential competition for passenger traffic from Devonport Airport. Indeed, when Kendell Airlines resumed its Tasmanian service from Devonport Airport, people from around Tasmania, including Hobart, reportedly travelled to Devonport to take advantage of the low fares (Barbeliuk 2001).

Coolangatta Airport faces competition from other airports in the southern Queensland region and northern New South Wales. One hundred kilometres south of Brisbane (and with a new rail link joining Brisbane and the Gold Coast), visitors to the Gold Coast have a viable option to go to Brisbane rather than Coolangatta. There are two indicators of the strength of this potential substitutability. First, even when no domestic new entrants flew there, it appeared that airfares to Coolangatta Airport fell when new entrants began flying to Brisbane. Second, airline websites and brochures issued by the Gold Coast Tourism Bureau note Brisbane or

8 As discussed below, airport charges are a small proportion of airfares. Nonetheless, at the margin, holiday travellers are likely to be more responsive to any price change. Further, to the extent that airlines respond to increased charges at one airport by decreasing the frequency of service, this also may make another proximate airport more attractive to travellers, and encourage airport substitution.

Coolangatta airports as alternative ways of reaching the Gold Coast by air (Gold Coast Airport, trans., pp. 373–4).

The reaction of Virgin Blue to the proposed 170 per cent increase in aeronautical charges at Coolangatta Airport (chapter 2), highlighted the potential substitutability of Brisbane for Coolangatta. For instance, Virgin Blue was reported as saying:

> We are bringing thousands and thousands of tourists every week to the Gold Coast through Brisbane airport. If we can fly into Brisbane for one third of the cost of the Gold Coast, why would we fly to the Gold Coast? (in Templeton and Mills 2001)

Gold Coast Airport also noted that:

> … we are very much open to competition from Brisbane and, apart from the fact that a lot of passengers want to come to the Gold Coast, the airlines are well established in Brisbane and it's not a hard thing for them to just move their whole operation up there. (trans., p. 499)

The degree to which the announced increase in charges at Coolangatta Airport could reflect market power is discussed below.

Brisbane, on the other hand, does not appear to face significant reciprocal competition from Coolangatta Airport. The Qantas Airways website (and in the past the Ansett website) suggests Coolangatta as an option for some flights to Brisbane. However, the scale of Brisbane Airport, the extent of business traffic it has, and the fact that it has a much stronger ability to service international traffic, mean that it is in a much stronger position than Coolangatta Airport. The ACCC commented:

> … while Brisbane is geographically and functionally distinct from Coolangatta, the reverse does not apply. That is, Coolangatta faces competition from Brisbane, but Brisbane is not necessarily constrained in its pricing by the proximity of Coolangatta, given the capacity limitations at the latter. (sub. 36, p. 67)

In the Northern Territory, Alice Springs Airport faces the most substantial competition from another airport. Many visitors to Alice Springs use the city as a starting point for their visit to outback areas such as Uluru. The airport at Alice Springs faces significant competition for this segment of holiday makers from Yulara Airport, which is much closer to Uluru. Despite higher charges at Yulara (Northern Territory Airports, sub. 25), Yulara has experienced strong traffic growth since 1997, in contrast to Alice Springs.

Potential airport substitution for Darwin Airport appears to be lower than for other NT airports such as Alice Springs. A higher proportion of visitors to Darwin than other areas of the Territory go for business and VFR purposes (although the majority still go for holidays). To the extent that these visitors travel by air, the relative isolation of Darwin means that other NT airports will not be sufficiently

close to be considered proximate. If international tourists want to travel directly to the 'Top End', the potential for airport substitution also will be lower, although the fact that most international tourists to the Territory arrive on domestic flights (box 5.3) mitigates this somewhat.

Northern Territory Airports noted that Darwin's location along the 'Kangaroo Route' means that 'it is relatively easy for airlines to bypass Darwin if they feel unhappy with our prices or our service' (sub. 50, p. 9). It noted further that Darwin Airport potentially competes for international hubbing traffic with other airports, particularly in South East Asia (sub. 50). However, it is not clear that these factors currently act as strong influences on Darwin's pricing behaviour. The main potential for airport substitution, then, is from airports within Australia for holiday visitors who travel to more than one region within the Northern Territory.

It does not appear that the other core-regulated airports face strong competition from other airports for domestic passenger traffic. As discussed in section 5.2, although there is more than one airport in some of these cities, such as Melbourne, the preference of users for using one hub airport means that the others do not present significant competition.

For international passenger traffic, the ability to substitute points of arrival and departure within Australia potentially is more significant. According to Bureau of Tourism Research data, slightly more than half of all international travellers visit more than one State or Territory in Australia (BTR 2000a, p. 36). Travellers visiting for VFR purposes are least likely, and holiday travellers most likely, to visit more than one State or Territory. To the extent that travellers visit more than one State or Territory, the potential for airport substitution, and hence the elasticity of demand for international travel to a particular airport, would be higher.

The potential for airport substitution appears to be most significant along the eastern seaboard. Melbourne Airport noted that:

> Whilst Melbourne Airport does not have any concrete evidence, our experience in dealing with travellers, airlines and tourist authorities suggests … international visitors tend to be indifferent to their place of arrival and destination but to prefer to arrive and depart from locations they wish to visit. (sub. 7, p. 10)

Further, it argued that it views its aeronautical market:

> … not just as Melbourne or Victoria but for international and long haul domestic services to encompass Tasmania, South Australia, the ACT and south New South Wales and potentially New Zealand and even Sydney for Europe and Asia. (sub. 7, p. 9)

On this basis, it has undertaken a survey to identify international segments that present growth opportunities (sub. 7). In addition, it noted that 'almost half the services added to Melbourne Airport since 1997 have been during times when Sydney Airport has been closed' (sub. 7, p. 12) — that is, when the curfew prevents Sydney Airport from operating. This implies that the curfew at Sydney might have influenced whether some new routes to Australia went to Melbourne rather than Sydney. Though these decisions were driven by a legislative constraint, it also indicates an ability and willingness to substitute airports for some international services.

Nonetheless, Sydney tends to be the dominant point of arrival and departure for international visitors to Australia. Over 45 per cent of international arrivals and departures went through Sydney, with about 20 per cent arriving or departing through Brisbane and about 15 per cent through Melbourne in 1999 (BTR 2000a). According to the Queensland Department of Tourism, Racing and Fair Trading:

> Many of the Queensland destined passengers are now being routed via Sydney for reasons of airline economics and not travelling public desire. Sydney is therefore a 'close substitute' and dilutes Brisbane's opportunity to be 'sole supplier' of airport facilities or access. Although Brisbane receives a proportion of short haul international services, consolidation of the international services, particularly from South East Asia, via Sydney continues to transport a significant proportion of Queensland destination traffic. (sub. 6, p. 2)

According to some, the rationalisation of airline networks following the events of September 2001 (chapter 2) may benefit Sydney 'because carriers are more likely to trim services to secondary capital city destinations first, maintaining capacity into a country's gateway airport' (Ballantyne 2001, p. 85). This indicates that Sydney may face less competition for international traffic from other Australian airports than the other airports face from each other and Sydney.

Supply substitution possibilities for dedicated freight traffic

For dedicated freight (freight that is not carried in passenger aircraft), the potential substitutability of airports is likely to be greater than for passenger services.

In some cases, there is more than one airport capable of servicing freight traffic in a particular city. Therefore, potential competition can come from airports within a city, as well as from airports in another proximate city. In Melbourne, for example, airports at Avalon, Essendon and Moorabbin all service freight traffic.

Melbourne Airport noted:

> … as freight services require less intensive infrastructure than passenger services (freight terminals are simpler than passenger terminals, freight doesn't require food and

> beverage outlets or car parks and so on) secondary airports also provide competition. In the case of Melbourne Airport, Avalon provides services for long haul domestic and international freight operators whilst Essendon and Moorabbin can accommodate aircraft carrying small high value consignments (such as courier bags). (sub. 7, p. 16)

In other cases, such as in Tasmania, the proximity of airports in other cities can make it less costly (and not significantly more inconvenient) to transport goods between centres by road than by air. As well as indicating intermodal substitution possibilities, it suggests that the market power of any one airport is constrained by the potential for its business to be moved to the other centre by other modes. Hobart Airport commented:

> Due to the close proximity of Launceston to Hobart, intrastate and interstate domestic producers and manufacturers, and exporters, road freight their goods to Launceston Airport for transhipment by air, due to the cost impact of a 20-minute flight between Hobart and Launceston, compared to road freight costs. (sub. 11, p. 4)

What constitutes a proximate airport in the case of dedicated freight traffic, particularly international freight traffic, is likely to be different than for passenger traffic. For instance, as noted above, Melbourne and Sydney airports are viable substitutes for Adelaide Airport in certain circumstances.

In addition, the network benefits that lead to a preference for using one airport for passenger traffic (section 5.2) are not as great in the case of freight in Australia. This gives airlines more scope to use more than one airport, or shift operations, for freight services. This seems to be the case particularly for international freight, for which the most important issue often is to move cargo to (or from) Australia rather than to a particular city. Melbourne Airport submitted:

> Freight service operators seem to be quite willing to change airports, which is a reflection that their businesses are driven primarily by the task of delivering imports to Australia rather than to any particular location or the carriage of export freight from a specific location. This is because what really drives the provision of freight services is the known availability of high value cargo. It is this preparedness to move coupled with a general availability of airport capacity that gives airports little market power in relation to freight services. (sub. 7, pp. 15–16)

Relative importance of airport charges in total airfares and airline costs

The relative importance of airport charges in total airfares can provide an indication of the potential responsiveness of (prospective) passengers to changes in airport charges. The relative proportion of airport charges in airline costs, on the other hand, may give an indication of the degree to which airlines may be willing to substitute away from an airport's services in response to a change in airport charges.

Each approach provides a different way of examining the potential price elasticity of demand for an airport's services.

The use of price discrimination ('yield management') by airlines (discussed below) makes it difficult to ascertain the proportion of a particular fare that airport charges comprise. The proportion of the fixed costs of operations (including landing charges) that airlines allocate to each customer segment differs. Thus, any estimate of the cost share of airport charges can be based only on an average fare. Applying the average charge to highest fares, for example, may underestimate the real cost share of airport charges in that fare. Likewise, applying the average airport charge to the lowest fare may overestimate the cost share of airport charges in that fare.

On average, airport charges tend to be a small proportion of total airfares. The exact proportion depends on the airport being considered (because charges vary across airports), as well as the particular airfare in question. Airfares in turn depend on the route, carrier and other conditions attached to the ticket, such as discounts for advance purchase.

For domestic passengers, participants suggested that airport charges comprise 2 to 3 per cent of the average airfare (MTAA Super Fund, sub. 22), while on particular routes this can be lower. For instance, on the Sydney–Melbourne route (the busiest route in Australia), airport charges comprise less than 1 per cent of the total full economy airfare (Hastings Funds Management, sub. 19), and are less than 0.8 per cent of a Canberra–Brisbane full fare (Capital Airport Group, sub. 32).[9]

However, these figures need to be interpreted carefully. In particular, the airlines that have leases over their terminals (chapter 2) pay for their leases, which are not treated as direct airport charges, but incur no other domestic terminal charges. The absolute level of charges — comprising both landing and terminal charges — will be higher for new entrant airlines, who do not operate their own terminals. Combined with their generally lower airfares, airport charges are likely to comprise a more significant proportion of new entrant airfares.[10] Thus, although charges are

9 These calculations were based on charges in place before the ACCC-vetted increase in charges at Sydney Airport, and before the increases at other airports that followed the Commonwealth Government's decision to change price regulation in October 2001 (chapter 3). However, given that average domestic airfares also rose after September 2001, it is not clear exactly how these proportions would have changed.

10 For example, the minimum (marginal) cost per passenger incurred by Virgin Blue is the terminal charge. Terminal charges actually paid by Virgin Blue are difficult to ascertain — for example because rebates may be provided, offsetting notional terminal charges levied. For illustrative purposes, assume terminal charges of $1.65 per passenger (at each end, GST inclusive), as allowed by the ACCC for the multi-user domestic terminal at Melbourne Airport. In this case, terminal charges would comprise less than 1 per cent of Virgin Blue's highest full

not likely to be a high proportion of full economy domestic airfares, they are likely to be more significant for low-fare carriers.

For international passengers, charges at Australian airports are an even smaller percentage of the total airfare. Though in absolute terms charges are higher (since, for example, international operators also incur terminal charges), airfares also are higher. The net effect is that airport charges levied by Australian airports comprise less than 1 per cent of the total average international airfare (MTAA Super Fund, sub. 22).

Aeronautical charges also are a relatively small component of airline costs, comprising about 4 per cent on average (Hastings Funds Management, sub. 19; Melbourne Airport, subs 7, 37; Westralia Airports Corporation, sub. 21).[11] Again, however, the situation is likely to be different for new entrants, which tend to have lower per seat cost structures (see footnote 10). As Virgin Blue noted:

> Airport charges constitute a significant component of the variable costs per passenger and are therefore critical to the success of a low fare operator. They are likely to be significantly less important to a traditional high cost airline. (sub. 30, p. 8)

In the absence of substitution possibilities, the fact that airport charges comprise a relatively low proportion of airline costs[12] and airfares suggests that the price elasticity of demand for aeronautical services could be relatively low.

Nonetheless, BARA (sub. DR54) noted the importance of aeronautical charges to passenger numbers, and airline schedules and viability.

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airfare on the Melbourne–Perth route (as advertised on its website on 11 December 2001), and up to almost 4 per cent of its lowest airfare on the Sydney–Melbourne route. The cost for the 'average' passenger would include this amount plus a proportion of landing charges. A B737 (as used by Virgin Blue) at typical load factors has around 1.5 passengers per tonne (MTAA Super Fund, sub. 22). Given this, based on the landing charges in place after the October changes to price regulation and the increase in charges at Sydney vetted by the ACCC (chapter 2), landing charges per passenger on the Melbourne–Perth route would be about $8.49 (in total, return, GST inclusive); and on the Sydney–Melbourne route about $9.33 per passenger (in total, return, GST inclusive). For the average customer on these routes, these estimates suggest that airport charges (incorporating terminal and landing charges) could comprise about 1.5 and almost 9 per cent of these fares respectively.

11 Charges levied directly by airports in Australia (that is, airport charges) are only one component of aeronautical charges. Other aeronautical charges incurred by airlines, such as terminal navigation and rescue service charges — which are levied in Australia by Airservices Australia, not airports — may be levied by airports in other countries. In addition, as already noted, airports do not levy domestic terminal charges on airlines that have domestic terminal leases. Thus, this figure, based on international estimates, may overstate the proportion of airport charges in the costs of the domestic operations of airlines in Australia.

12 Though this appears to be low, Ansett (sub. 42) noted that an individual input is considered to be high cost if its total cost represents more than 1 per cent of an organisation's total costs.

As noted above, new entrant airlines are also likely to be far more price sensitive than the more established domestic airlines. As a consequence, Melbourne Airport commented:

> … an airport that increases its prices is more likely to lose new entrant volume and, indeed, if an airport is too aggressive with respect to its prices, new entrants may bypass it much in the same way that international carriers can … The decision that airports then face is whether to drop price or not to gain business. (sub. 7, p. 14)

Further, as noted in box 5.2, the relative importance of this factor also depends on the substitution possibilities available to consumers and airlines (discussed above). Layard and Walters noted:

> … the short-run demand elasticity for any airport's service is quite low, though in the longer run, of course, other airports can be substituted, and the number of landings per trip reduced by larger planes, fewer stopovers, and so on. Proportions are likely to be variable in the long run. (Layard and Walters 1978, p. 262)

Supply responses of other input providers

As noted in box 5.2, the maximum price that a particular input provider can receive (for a given level of production) is limited by the amount that consumers are willing to pay for the final good, and the price that other input providers require for their own services. Thus, an increase in the price of one input requires an increase in the price of the final good and/or a lower price being accepted by other input providers. The lower the ability of other input suppliers to accept a lower price, the greater is the required increase in the price of the final good and, hence, the greater is the fall in quantity demanded.

In other words, the elasticity of demand for airport services will be influenced to some extent by the elasticity of supply of airline services and other input suppliers to air travel, such as Airservices Australia (ASA). The Commission has been unable to find literature discussing the interrelationship between airport pricing and the cost structures of other input suppliers. Therefore, the discussion in this section is tentative. Nonetheless, it seems clear that the pricing decision of an airport will tend to induce a supply and/or price response from other input suppliers. This section briefly examines airline cost and pricing structures, and the charges of ASA.

Airline costs and pricing

Broadly speaking, it appears that airlines have decreasing costs, though some studies have found this to be driven by economies of scope, networks and density, rather than economies of scale *per se* (Reed 1999).

Button and Stough noted:

> … the evidence indicates that within any city pair markets there are rapidly declining costs of service but that there are approximately constant returns to scale for airline systems that have reached the size of the US trunk carriers. Savings come from attracting more traffic rather than expanding the network to cover additional origin/destinations; any additional routes increase the operator's quasi-fixed costs which may negate the benefits derived from more traffic. (Button and Stough 2000, p. 22)

It also appears that the cost of carrying an extra passenger on a flight is minimal (OECD 2000), assuming there is spare capacity.

To the extent that airlines have decreasing costs, the ability of airports to increase profits by increasing their charges may be constrained. If the consumption of air travel falls in response to an increase in airport charges, then the unit costs of airlines also increase, exacerbating the effect on price (and hence quantity consumed) of air travel.

Further, it appears that price discrimination by airlines (charging different prices to different users with a different willingness to pay) is pervasive and increasingly sophisticated. Network Economics Consulting Group argued that, although airlines are limited in their ability to price discriminate, there is likely to be 'a considerable amount of price discrimination in airline services' (NECG 2000a, p. 3). And, according to the MTAA Super Fund:

> Business class and full economy fares cover much of the fixed costs of airline operations, with discount leisure fares covering marginal costs and only a small contribution to fixed costs … the airline faces separable demand for capacity on each flight and sets prices to raise revenue in the most efficient manner. Airlines recover proportionally more from the relatively more price-inelastic demands. (sub. 22, p. 31)

To the extent that price discrimination is needed to cover the fixed costs of airlines, the ability of airports to increase charges (or impose other costs on airlines) may be constrained somewhat. The entry of Impulse and Virgin Blue appears to highlight the fact that airlines in Australia recently have operated in a competitive environment and have not been earning returns greater than those of other competitive parts of the economy. Thus, the price discrimination undertaken by airlines may indeed be necessary to cover their fixed costs.

Airservices Australia

The other major input supplier to air travel is ASA, the Government-owned commercial authority that levies charges such as those for terminal navigation, rescue services and firefighting services (chapter 2).

ASA charges tend to be significantly higher than the charges levied by airports and, because of the way in which the charges are calculated, they are particularly high at smaller airports (chapter 2). Hobart Airport highlighted the relative importance of these charges for airports like itself, noting that they are about 'three times dearer than we [Hobart Airport] are' (trans., p. 329).

ASA determines whether the services for which they charge are provided, so neither airports nor airlines have discretion about whether they are provided at a particular airport. In addition, the fact that ASA charges are based on projected passenger throughput in a period means they are effectively fixed charges for that period. Therefore, any increase in charges (or other costs) imposed by an airport that leads to a fall in passenger throughput (below the projected levels) also leads to an increase in the average ASA charge for air travel to the airport. This suggests that airport operators, particularly at smaller airports, may be restrained somewhat in their pricing decisions by the fixed quantum of ASA charges.

Summing up: implications for market power of particular airports

Given that barriers to entry are likely to be of similar relevance to all RPT airports (section 5.2), other factors that influence the elasticity of demand for a particular airport's services are likely to be the dominant influence on the extent to which market power differs across airports. A common view is that the elasticity of demand for airport services is very low, mainly because airport charges comprise a relatively small proportion of airline costs and airfares. When combined with natural monopoly characteristics in the provision of airports, this is seen to give airports a significant degree of market power.

The above analysis suggests that factors other than the proportion of airport charges in average airfares or airline costs can also be important in determining the elasticity of demand. The potential for destination, modal and airport substitution has ramifications for the potential market power of particular airports.

FINDING 5.2

The price elasticity of demand for the services of a particular airport is influenced by a number of factors. Although the typically low proportion of airport charges in airfares and airline costs suggests low price sensitivity, this will be mitigated by any potential for destination, modal and airport substitution, and the supply responses of other input providers to changes in airport charges.

Airports that face more significant substitution possibilities will face more price-sensitive demand (and hence have lower market power).

A summary of the Commission's assessment of these demand factors in relation to each of the core-regulated airports is provided in table 5.5, and elaborated on in appendix D. (The supply responses of other input providers are not explicitly accounted for in this table.)

Table 5.5 **Summary of demand and competition characteristics of core-regulated airports for domestic passenger traffic**

Airport	*Main market segment to destination for interstate travel*	*Potential for destination substitution*	*Potential for modal substitution*	*Potential for airport substitution*	*Overall degree of market power*
Adelaide	Business/VFR	Low	Moderate	Low	Moderate
Alice Springs	Holiday	High	Moderate	High	Low
Brisbane	Business/VFR	Low	Moderate	Low	High
Canberra	Business/VFR	Low	High	Low	Low/Moderate
Coolangatta	Holiday	High	Moderate	High	Low
Darwin	Holiday	High	Moderate	Low	Low/Moderate
Hobart	Holiday	High	Moderate	High	Low
Launceston	Holiday	High	Moderate	High	Low
Melbourne	Business/VFR	Low	Moderate	Low	High
Perth	Business/VFR	Low	Low	Low	High
Sydney	Business/VFR	Low	Moderate	Low	High
Townsville	Holiday	High	Moderate	Low	Low

From this analysis, it appears that Alice Springs, Coolangatta, Hobart, Launceston, and Townsville airports are likely to possess least market power.

- They all serve predominantly tourist markets that face a high degree of destination substitution.
- Though all these airports are the only RPT airports in their respective cities, Alice Springs, Coolangatta, Hobart and Launceston appear to face effective competition from airports in proximate locations:
  - Alice Springs from Yulara;
  - Coolangatta from Brisbane; and
  - Hobart and Launceston from each other.
- Potential competition from other airports does not appear to be significant for Townsville. However, there appear to be some modal substitution possibilities. As noted earlier, this does not imply necessarily that the elasticity is high at the margin. Nonetheless, the fact that it is predominantly a tourist market suggests that market power would be relatively low.

Participants generally agreed that these airports did not have significant market power. This included the ACCC (sub. 36), but not some airlines that felt that all airports potentially have significant market power.

On 5 October 2001, the Commonwealth Government announced changes to prices regulation for core-regulated airports (chapter 3). Under Revocation No.28, Alice Springs, Coolangatta, Hobart, Launceston and Townsville airports are no longer subject to price regulation.

Of this group, Coolangatta, Alice Springs and Townsville increased charges following the announced changes to price regulation (chapter 2). Some have argued that this shows that these airports can exercise market power. The airports, on the other hand, have argued that these increases are necessary, given the impact of the reduction of Ansett services on traffic levels.

It is unclear at this stage whether the increase in charges represents the exercise of market power. Given airport cost structures (particularly at smaller airports), a significant fall in traffic would increase unit costs. Most airports that have increased their charges have indicated that the charges will be reviewed in 2002, in the light of market developments.

The extent to which the price rises might reflect the exercise of market power can be assessed only in the medium to longer term, when the response of airlines and their passengers, and the consequent impact on revenues and profits, become apparent. Ultimately, assessing whether the price increase is efficient requires examination of whether another operator, charging lower prices, could efficiently operate the airport on a continuing long-term basis. This cannot be assessed with the information that is currently available.

It appears that, although they are not immune to substitution possibilities, Brisbane, Melbourne, Perth and Sydney airports possess substantial market power. In terms of the eastern capital cities:

- They have high proportions of business and VFR travellers, who tend to have more price inelastic (and time-sensitive) demands. Business travellers also tend to be more significant users of air travel than other groups (table 5.3).
    - Nonetheless, a fairly high proportion of interstate visitors to eastern States travels by modes other than air (table 5.4), indicating that modal competition is strong for at least some market segments.
- They do not appear to face significant competition for domestic passenger traffic from other airports.

- Their status as the main international ports of arrival and departure in the country may add to their potential market power (and leverage) in the domestic market. Competition among these airports for international traffic may decrease, though not eliminate, this effect.

With respect to Perth Airport, the isolation of Perth (and the fact that most visitors go there for business or VFR) is a significant source of its market power. This is highlighted by the fact that a very high proportion of visitors arrives by plane (table 5.4). Westralia Airports Corporation itself accepted that, on the basis of the high barriers to entry and limited modal substitutes to Perth, it:

> … possesses market power in the provision of aeronautical services, but is strongly of the view that it does not abuse this market power. (sub. 21, p. 30)

Most participants agreed that, of all the core-regulated airports, Brisbane, Melbourne, Perth and Sydney have most market power. The Queensland Department of Tourism, Racing and Fair Trading (sub. 6) argued, however, that Sydney and Melbourne airports had more market power than Brisbane Airport.

In general, any claims of abuse of market power for these airports have related to specific services. These issues are addressed in chapter 6. Sydney Airport has been accused of a more general abuse of market power in relation to its 2000 pricing proposal and, in particular, the size of the proposed increase in its charges. Of itself, the magnitude of the proposed increase — 75 per cent of which was approved by the ACCC in May 2001 — does not indicate an abuse of market power, particularly given the special circumstances of Sydney Airport. Prior to the increase, landing charges at Sydney were significantly lower than those at any other core-regulated airport, despite excess demand for several hours a day (and the convenient location of the facility) (chapter 8). The price increases also reflected a switch from single-till to dual-till pricing.

For Brisbane, Perth and Melbourne airports, the changes to price regulation announced in October 2001 allowed a one-off increase to be passed through the cap (chapter 3). All three applied the allowed increases. Melbourne Airport, for example, implemented the price increase by rebalancing charges. While domestic charges increased, there was no net change to international charges (chapter 2). Given the different natures of the shocks in the two markets — supply side in the domestic market, and demand side in the international market — this may be an efficient price response.

The degree of market power held by Adelaide, Canberra and Darwin airports is less clear. The ACCC (sub. 36) submitted that all three possess sufficient market power to warrant continued regulation.

Darwin is the major air entry point for the Northern Territory (NTTC 2000), and the only direct port of arrival to the Territory for international travellers. It also is relatively isolated. Nonetheless, although it has a higher proportion of business and VFR travellers compared with other NT regions, its dominant market segment is holiday travel. Thus, it would seem to face a potentially significant degree of destination substitution. In addition, most international travellers who arrive in (and leave) the Northern Territory by air do so on domestic flights. This decreases any market power that otherwise may accrue to Darwin through its ability to service international traffic. On balance, it does not appear that Darwin Airport has a high degree of market power, although its market power is likely to be more significant than that of Alice Springs.

Both Adelaide and Canberra have high proportions of business and VFR travellers. They also do not face significant potential for airport substitution. Nonetheless, they, and some others such as Melbourne Airport (trans., p. 177), suggested that Canberra and Adelaide airports do not hold significant market power. Adelaide Airport, for example, argued:

> … we're not actually a strategic hub base for at least one national carrier, nor is our city a major economic or cultural capital for our nation here in Australia. Adelaide is very much of secondary importance to our largest customer groups. These are very important drivers of market power in our perception. (trans., p. 181)

It also argued that it faces a high degree of modal substitution. BARA (sub. DR54) and the ACCC (sub. DR55) disagreed, however. BARA argued that:

> … for business travellers such substitution is limited (given the time difference between air travel and road travel between the cities). For the majority of travel between Adelaide and other cities the substitution is likely to be even more limited. To assess the degree of modal substitution for Adelaide Airport requires information on the origin and destination of persons using Adelaide Airport. (sub. DR54, pp. 30–1)

Tourism data suggest that 75 per cent of interstate overnight visitors to South Australia were from Victoria and New South Wales in 2000 (SATC 2001). Adelaide Airport Limited (sub. DR77) also noted that the majority of visitors from these States arrive by surface transport.

Thus, for the major visitor markets to Adelaide — holiday and VFR from Victoria and New South Wales — the degree of modal substitution may not be insignificant. On the other hand, modal substitution for business travellers, and those from other areas, would be fairly low. On balance, the degree of modal substitution for Adelaide Airport appears to be moderate, which would tend to constrain the airport's overall market power.

With regard to Canberra Airport, a large proportion of visitors to Canberra arrives in private vehicles (table 5.4). This may reflect the high proportion of Sydney–Canberra traffic in the total arrivals in Canberra.

Capital Airport Group noted that the Canberra–Sydney route comprises about 50 per cent of the airport's market (trans., p. 463). Although this is likely to be predominantly a business market, other modes are likely to provide relatively strong transport options even for this market segment. As already noted, on this route, the distance between origin and destination is such that driving may be less time-consuming than flying (taking into account travel time to and from the airports at both ends). Thus, even some business travellers may find this a close substitute for air travel. Capital Airport Group contended that:

> … the impact of *modal* substitution on Canberra Airport is at least as great as that which results from *airport* substitution possibilities on airports such as Coolangatta and Launceston. (sub. DR75, appendix 1, p. 1)

That its major market potentially has strong modal substitutes would act to moderate somewhat the market power of Canberra Airport. This is so even though its primary market — business — normally is considered a relatively less elastic market segment. Nonetheless, the overall market composition of Canberra Airport suggests that it may have more market power than airports such as Coolangatta and Launceston, which face strong airport substitution possibilities.

On balance, although the market power of Canberra and Adelaide airports does not appear to be as significant as Brisbane, Melbourne, Perth or Sydney, both airports appear to have a moderate degree of market power.

Following the Government's issue of Revocation No. 28 and Direction No. 26, which together replaced the price cap with price monitoring for Darwin, Adelaide and Canberra airports (chapter 3), all three airports increased their aeronautical charges (chapter 2).

As noted earlier, such increases may not, of themselves, reflect the existence and exercise of market power. Airport cost structures may justify this response to falling volumes. Only in the medium to longer term will demand responses provide some indication of the profitability of the change for airports (and, thus, whether the changes might reflect an abuse of market power).

Furthermore, Canberra Airport also provided incentives to attract flights following the reduction of Ansett services. It commented:

> So we've got back 6000 out of the 28,000 seats we lost. We did that by offering substantial incentives to these businesses. We assisted with their marketing, we worked

with the governments to provide them with assistance. We worked with hotel groups to provide them with accommodation, [and with] the taxi industry … (trans., p. 461)

FINDING 5.3

Of the core-regulated airports, Sydney, Melbourne, Brisbane and Perth have most market power. Adelaide Airport is likely to have a moderate degree of market power. Canberra and Darwin airports also are likely to have a moderate degree of market power, though they appear to face stronger substitution possibilities than Adelaide Airport.

Core-regulated airports that do not appear to have significant market power (due mainly — except for Townsville — to the scope for effective inter-airport competition) are Alice Springs, Coolangatta, Hobart, Launceston and Townsville.

Market power of core-regulated airports in providing international services

The market power of core-regulated airports generally is not likely to be significant in the international market, even for Australia's major international airports (Sydney, Melbourne, Brisbane and Perth).

- For international passengers, the ability to substitute points of arrival and departure within Australia potentially is more significant than for domestic travellers. In particular, there is potential substitutability of airports along the eastern seaboard.
  - The apparent impact of the curfew at Sydney Airport — in terms of allowing Melbourne Airport to attract new services — highlights this potential substitutability.
  - Airports appear to have competed strongly to attract new international services.
- International air carriers may be quite sensitive to increased airport charges. Brisbane Airport Corporation noted that, prior to the change in price regulation (chapter 3), it 'had already approached the airlines seeking a 25 per cent increase in charges for the remaining period of the price cap' (trans., p. 513). BARA commented that:

  … a number of our members who operate to Brisbane Airport said that that sort of level of increase in prices would under the current circumstances result in their reducing services to Brisbane Airport quite markedly. It had a very significant effect on the returns for the likes of Singapore Airlines, for instance. (trans., p. 540)

Nonetheless, Sydney, as the main international gateway airport in Australia, is likely to have a more significant degree of market power for international traffic compared with the other core-regulated airports.

Market power of non-core-regulated airports

The focus of the above discussion has been on market power at core-regulated airports. However, a number of participants discussed market power in relation to other airports — mainly with reference to regional airports in general, though some airports have been discussed specifically.

Given the number of non-core-regulated airports that cater for RPT traffic in Australia, this section will focus on general issues relating to regional airports. Some particular cases mentioned by participants (Cairns and Yulara) are treated separately.

Market power and non-core-regulated regional airports

Regional airports in Australia are not a homogeneous group; a relatively small number service RPT traffic, with most catering for general aviation movements only (chapter 2). Facilities provided at these airports also differ widely, ranging from little more than an airstrip, to international terminal facilities.

Despite these differences, it is possible to make some general comments about the potential market power of regional airports. Some factors may imply the existence of market power.

- It is unlikely that there would be more than one airport in any particular regional centre. Although capital investment requirements at regional airports are significantly lower than those for airports in the major capital cities, the potential traffic volume through the airport is unlikely to be high in most cases. There also may be issues of obtaining approval to construct a new airport.
- Most remote locations depend on air transport. As Australian Airports (Townsville) noted in the case of Mount Isa: ‘We’re talking about a community of 19 000 people. It relies on the airport as basically its only means of quick communication’ (trans., p. 7).

However, a number of factors may mitigate the extent and exercise of market power by regional airports. The importance of air transport to many regional communities means that the community is likely to take a great interest in the decisions of the airport and try to exert its collective influence over those decisions.

Australian Airports (Townsville) noted:

> The local community also plays a major role in terms of market power restraint of airports. The community has expectations and subsequent demands as to the level and quality of services to be provided by the airport as well as the fee that they are willing to pay for these. The community is able to exert pressure on the airport operator to ensure that service levels are appropriate and that prices are at a level that supports economic goals and development within the region the airport serves. (sub. 14, p. 10)

In addition, with some exceptions, regional airports do not tend to be critical to the overall operations of airlines, so competitive pressures are unlikely to compel airlines to fly to many of these airports. In this situation, it is not clear that it is the airports that have the market power. As noted by the Department of Industry, Science and Resources:

> Airlines can more easily reduce services at smaller regional airports but the commercial risks of sacrificing access at major city airports would be much higher. (sub. 40, p. 3)

Further, the larger regional airports (including some regional core-regulated airports) tend to serve predominantly tourist traffic. As noted above, this market segment is likely to be more price sensitive than other market segments, decreasing somewhat the market power of airports in these locations.

Finally, many general aviation and regional airports in Australia are local government-owned (chapter 2). Therefore, the users and (direct or indirect) beneficiaries of the airport's services are the residents who also indirectly own and operate the airport through their elected council representatives. Given the importance of the local airport in many regional communities, and because the impacts of airport policy are relatively localised, discipline on the airport operator — the council — to represent the best interests of users could be provided through the electoral process.

Nonetheless, some participants expressed concern about abuses of market power at regional airports. The Western Australian Government, for instance, commented:

> We are concerned that some airports … are using their monopoly position to maintain and increase charges. We are aware, certainly from the airlines and other sectors of the industry, there is little consultation when this takes place. We do have examples in Western Australia where … key infrastructure has gone in ahead of time, as to when it was needed. (trans., p. 389)

Concerns also have been raised about the extent to which councils use airport charges to fund general community projects rather than aeronautical uses. Again, the Western Australian Government stated:

> An area of concern to us — as has been shown in other parts of Australia — is that airport revenue is being used to fund non-airport related plant and infrastructure. (trans., p. 389)

Anecdotal evidence suggests that charges at regional airports vary significantly. No charges are imposed at some regional airports, while charges can be very high at others. Ansett suggested that 'a lot of the regional ports have exceptionally high charges' (trans., p. 125). Of themselves, high charges do not necessarily indicate an abuse of market power. The small traffic volumes of most regional airports suggest that efficient unit costs may be high.

Given the ownership structure of most regional airports, the variation in charges also reflects local government objectives, which Professor Forsyth noted can be diverse:

> Some local government owned firms may indulge in monument building. On the other hand, a local government owner may use its airport to attract visitors to the region; if this is the objective, it will induce the airport to keep costs low and to keep prices in line with costs. It is also possible that some local governments will require their airports to maximise profits, so that they can use these to cross subsidise land rates. (sub. 5, p. 17)

However, if the airport policy of regional councils does not reflect local community wishes, then this arguably is more properly a local governance issue, not a market power issue to be addressed by the national economic regulation of regional airports.

Objectives other than the exploitation of market power also may explain seemingly high charges at airports located at resorts, for instance. Scott-Bloxam (sub. 2) submitted that landing charges at Lizard Island were 'astronomically high'. Although acknowledging that the maintenance of the sealed strip would be substantial, he added: 'I fail to see where a 3 seat Cessna 172 or 5 seat Cessna 206 can attract such high fees other than to discourage their visit' (sub. 2, p. 1).

If landing charges reflect the high costs of the strip, an objective to keep visitor numbers low to cater for a particular market segment, or environmental objectives, then it is not clear that this constitutes an abuse of market power. Further, although resorts are differentiated from each other, potential visitors have a variety of resorts from which to choose. Thus, the resort market can be seen as competitive. In this case, the overall pricing behaviour of a particular resort, including the charges of its airport (an input to the resort product), would be constrained somewhat by competition among resorts.

Does Cairns Airport have market power?

Given that Cairns is a regional airport, much of the general discussion above is relevant to it. However, Cairns has unique characteristics that warrant further discussion. In addition, Ansett and BARA pointed to issues in their dealings with

Cairns that they argued resulted from its market power. These issues related to the level of charges, efficiency and degree of consultation. On the other hand, Australian Airports (Townsville) (sub. 14) argued that it did not believe that unregulated Queensland airports, including Cairns, had abused market power.

Cairns potentially may have more market power than most other regional airports. It is the sixth largest RPT airport in the country in terms of passenger movements (larger than many core-regulated airports (chapter 2)), and is a designated international airport, suggesting that it has a significant demand base. Indeed, Australian Airports (Townsville) noted that Cairns is relatively attractive as a tourist destination compared with Townsville, for instance, 'which is not as well developed as a tourist attraction' (sub. 14, p. 14).

The relative popularity of Cairns as a tourist attraction may give it an advantage over other destinations and mean that it is a more important part of airline operations compared with some other regional airports. Nonetheless, like any primarily tourist-based destination, it is relatively vulnerable to competition from other destinations. The recent withdrawal of a number of international services from Cairns highlights this vulnerability and, according to Gold Coast Airport, reflects that 'a full-service airline finds it difficult to make money on a tourism route' (trans., p. 378). In addition, the airport faces some competition from other modes (box 5.3).

In this situation, the market power of Cairns does not appear to be significant. As noted by the Department of Industry, Science and Resources:

> Airports which primarily service seasonal tourist destinations such as Cairns and Maroochydore have the least amount of market power. (sub. 40, p. 3)

Given this, to the extent that charges are higher at Cairns than other airports, they appear unlikely to reflect an abuse of market power. Since the major airlines incur domestic terminal charges at Cairns, which they do not incur at the core-regulated airports where they provide these services themselves, the charges at Cairns could be expected to be higher than those at core-regulated airports.

Further, the Commission understands that landing and terminal charges at Cairns Airport (exclusive of GST) have not increased since new charges were negotiated in 1990 (although some new charges, relating to Government-mandated security requirements, for instance, have been introduced). Including GST, current domestic landing charges are $3.84 per tonne (based on maximum take-off weight (MTOW), which is lower than the core-regulated airports (chapter 2)), and domestic terminal charges are $3.84 per passenger. Though terminal charges are higher than those for some common-user terminals, a more relevant comparison may be the per

passenger costs of the domestic terminals operated by the major domestic airlines. However, the Commission does not have these data.

Market power of Yulara (Ayers Rock) Airport

Ansett cited its experiences with Yulara Airport as an example of the fact that 'smaller non-regulated airports are also not averse to exercising their market power' (sub. 42, p. 27).

However, it is not clear that Yulara Airport has significant market power.

- It may have an advantage as a tourist destination. However, it competes for visitors with other 'unique' destinations.
- The airport is owned and managed by the owners of the Yulara Resort. It is thus part of an integrated resort operation. Managers may seek to make profits from the operation as a whole. However, it is likely that this would be done by attracting visitors to the resort (subject to capacity constraints). In addition, as noted above, the resort market can be seen as competitive. Competition would tend to constrain somewhat the pricing of a particular resort, including the charges of its airport (an input to the resort product).
- The costs of establishing and running an airport in that location are likely to be very high, especially given the runway requirements for jet aircraft and comparatively small volumes of planes and passengers.
- To the extent that there is a type of locational rent associated with its location, this would have been captured by the owner of the site when the lease was purchased.

5.4 Summing up

The overall market power of a particular airport is encapsulated in the price elasticity of demand for its services, which will reflect substitutes available to users, and the share of airport charges in airline costs and airfares.

In the absence of substitution possibilities, the low proportion of airport charges in airline costs and airfares might suggest low price sensitivity and strong market power. Barriers to entry in the provision of airport services also suggest that the scope for airport substitution is likely to be low. However, substitution possibilities exist — destination, modal and even airport substitution (an airport in another location may provide competition in some cases) — which may be quite strong for

some airports. Hence, the sensitivity of some travellers to price changes at particular airports may be quite high. Thus:

- Of the *core-regulated* airports:
  - Hobart and Launceston, as well as Coolangatta and Alice Springs, appear to have little market power because of their reliance on the tourism market and, particularly for this market segment, scope for competition from 'nearby' airports. Townsville Airport also has limited market power because of its reliance on the holiday market (and scope for competition between holiday destinations and from other transport modes).
  - Adelaide, and to a lesser extent, Canberra and Darwin have a moderate degree of market power. Although Adelaide and Canberra have high proportions of business and VFR travellers and do not face significant potential for airport substitution, they (especially Canberra) do face modal substitution for visitors from their major markets.
  - Brisbane, Melbourne, Perth and Sydney airports possess a high degree of market power in domestic markets due to high proportions of business and VFR travellers, and their status as the main international ports of arrival and departure in the country. Competition among those airports for international traffic may moderate, though not eliminate, this latter effect.
- With respect to *non-core-regulated* airports:
  - No charges are imposed at some regional airports, while at others charges can be very high. Of themselves, relatively high charges need not reflect an abuse of market power. The small traffic volumes of most regional airports suggest that efficient unit costs typically may be high. Charging at regional airports (which in many cases are owned by local municipalities) also can reflect a range of objectives. Privately-owned airports servicing resorts generally operate in the highly competitive tourist market.

6 Market power in particular airport services

In addressing the requirement of the terms of reference that 'future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power', chapter 5 examined potential market power of particular airports in Australia. This chapter considers the extent of an airport's market power in particular services provided at airports.

6.1 Introduction

It was found in chapter 5 that Sydney, Melbourne, Brisbane and Perth are likely to have the highest degree of market power of Australia's core-regulated airports, followed by Adelaide, Canberra and Darwin, which appear to have moderate market power. The others — Townsville, Alice Springs, Hobart, Launceston and Coolangatta — possess little, if any, market power.

The market power of an airport depends on its market power in providing particular airport services. Although an airport that has market power in the overall market for airport services must have market power in some of the individual services, this does not mean necessarily that it has market power in all services provided at the airport.

The extent to which it is meaningful (from a regulatory perspective) to distinguish market power by service depends on the degree to which airport users, having made a decision to use an airport, have alternatives to the consumption of particular airport services. This in turn depends on the availability of off-airport substitutes, the availability of alternative on-airport suppliers and/or the strength of the demand preference for that service (that is, the extent to which the service is required by users). The Board of Airline Representatives of Australia (BARA) considered that all airport services form part of the required bundle for airlines:

> … airports compete in a cluster market for the supply of a range of services required by airport users and particularly airlines. As a result, the airport's market power extends across the package of services provided … As these services are purchased as a package, constraining the price of one of the elements will simply result in a higher price for one or more of the other elements. In order to address the market power (and

> associated efficiency loss) the regulation must encompass the package … (sub. 26, pp. 13–14)

The ACCC noted the importance of considering non-discretionary bundles of services, but added:

> Determining the services which should be included in the cluster of 'airport services' … rests primarily on an assessment of the scope for supply side substitution. (sub. 36, p. 78)

Virgin Blue argued:

> A firm is likely to have market power when its customers have no *alternative* source of supply, albeit that the customers may choose not to take supply at all. (sub. DR74, p. 3)

However, both demand-side and supply-side conditions are important in determining airport market power in particular services, and both dimensions are considered here.

In addition, in assessing any evidence of (the use of) market power in particular airport services, it is important to distinguish between 'monopoly profits' on the one hand and 'locational rents' on the other.

- Monopoly profits are profits in excess of the rates of return required to maintain supply of the good or service.
- Locational rents are returns accruing to a scarce factor rather than returns deriving from the exercise of market power as such.

To the extent that profits reflect locational rather than monopoly rents, they do not involve an efficiency loss through distorted supply and demand (appendix C), but rather reflect the value placed on scarce resources by consumers and provide signals for their efficient use.

Different classifications of airport services are possible. Those used below broadly follow the ACCC (sub. 36) and Department of Transport and Regional Services (sub. 39) approaches.

6.2 Aircraft movement facilities

Aircraft movement facilities include runways, taxiways, aprons and aircraft parking, as well as airside grounds, airfield lighting, airside roads and lighting, airside safety, nose-in guidance, and visual navigation aids.

These facilities are essential to the operation of the airport. Planes arriving at an airport need a runway to land, taxiways are needed to move aircraft from the

runway to aprons or parking areas and so on. Airline discretion over aircraft parking may be higher than for the other components of aircraft movement facilities, to the extent that airlines have a choice about where to end their services for the day. Nonetheless, it is likely to be infeasible for airlines to move empty aircraft and flight crew to another airport simply to minimise parking charges, given the costs involved. Aircraft parking charges may, however, influence whether airlines choose to park on the apron or elsewhere at the airport.

As well as being essential to users of an airport, these facilities, particularly runways and taxiways, are likely to be the most significant source of natural monopoly for airports. Indeed, as noted in chapter 5, to the extent that there are economies of scale in the provision of airport services, they derive mainly from the provision of runways. Economies of scope arise in that different types of aircraft can land at the one facility (chapter 5). Hence, the supply characteristics are such that there generally will be only one supplier of these facilities in a location.

Thus, where an airport has market power, its market power in relation to aircraft movement facilities is high (and effectively equal to its overall market power).

6.3 Passenger processing facilities

In broad terms, passenger processing facilities refer to all facilities that provide services to passengers, up to the point that passengers enter, or from the time they exit, the plane. They can include check-in desks, aerobridges, airside buses, departure and holding lounges (but not VIP lounges, which are discussed separately below), immigration and customs service areas, public address systems, closed circuit surveillance systems, security systems, baggage handling and reclaim areas, public amenities, other public areas in terminals, lifts, escalators, moving walkways and flight information display systems (ACCC, sub. 36).

Some forms of passenger processing facilities — such as check-in desks and baggage handling and reclaim areas — are required for both domestic and international traffic. However, there also are inherent differences in the nature and extent of processing facilities required for international, compared with domestic, services. In particular, immigration and customs service areas are required (by law) for international airlines, but are not necessary for domestic travel.

This section examines in two stages the market power held by airports in passenger processing facilities. The first part explores general issues relating to terminals and passenger facilities. The second looks specifically at check-in counters, which, for the airports subject to the price cap, are not included in the cap but are monitored (chapter 3).

General terminal facilities

For the airlines that hold long-term leases over their domestic terminals (chapter 2), the airlines, rather than the airports, provide many domestic terminal facilities and services. In this case, BARA noted:

> … the service provided by the airport is access to space adjacent to the runways and taxiways upon which the terminal is located. (sub. 26, p. 4)

On the other hand, domestic new entrant airlines have relied on airports for direct provision (and construction) of common-user terminal facilities.

The extent of airport market power in these services will be determined by the degree of discretion that airlines have over what is to be provided, the ability to build new facilities, and opportunities for off-airport provision of the services. Australian Airports (Townsville) argued:

> Passenger processing facilities … may be used selectively by the customers and can be provided to the level of quality to meet the customers and end consumers needs. (sub. 14, p. 17)

The ability and willingness of airlines to tailor passenger processing facilities to the needs of their customers has been highlighted in Australia by the domestic new entrants. Terminals built to accommodate them have been more spartan than those of the established airlines. In addition, the preference of Virgin Blue not to use aerobridges shows that some of the facilities do not need to be used at all.[1] Airline discretion about the extent of these facilities will vary depending on the main market segments they serve.

On the supply side, unlike runways, on-site incremental development of passenger processing facilities is feasible, so the barriers to entry may not be significant (especially if the extent of facilities required is small). Nonetheless, as the ACCC (sub. 36) noted, space constraints may limit the future ability to construct new terminals.

Where on-site expansion is feasible, issues appear to relate to access to airport land to build facilities, or disagreements between the airline and the airport about the type of facilities that should be built. For instance, Impulse Airlines noted that 'there are issues in terms of what we think should be a standard of terminal supplied' (trans., p. 40). Virgin Blue also argued that:

> Where new facilities are required, in Virgin Blue's experience, some airport operators are not willing to be flexible about the standard of terminal facility which Virgin Blue is able to access. (sub. 30, p. 9)

1 However, where there is apron congestion, the choice of whether to use aerobridges is limited.

In addition, Virgin Blue (sub. 30) submitted that it offered to construct a terminal at Melbourne Airport, and provide access to other entrants, but was refused by Australia Pacific Airports (Melbourne) (APAM, the operator of Melbourne Airport), which decided to build its own common-user terminal. Following negotiation over the terms on which access would be granted to the terminal on a long-term basis, Virgin Blue made an application for an access determination under s. 192 of the *Airports Act 1996* (chapter 9).

In its report for the ACCC in relation to the Virgin Blue determination, Network Economics Consulting Group (NECG) commented that:

> … the fact that the owner of the existing terminal is also the owner of all the land in the surrounding vicinity is highly relevant. We believe that Melbourne Airport would have strong incentives to deter entry by a potential competitor in the market for the provision of terminal facilities … the new entrant could easily find that it becomes uneconomic to duplicate the existing terminals. (NECG 2001b, p. 46)

However, it is not clear that the difficulties in the Virgin Blue–Melbourne Airport negotiation process demonstrate an abuse of market power by the airport. Airports, including Melbourne, appear to have been eager to attract the business of new entrant airlines (who have sought new facilities from airports, rather than seek access to existing terminals operated by other airlines).

The problems that arose in this case seem to have stemmed primarily from a difference of opinion about what was appropriate and required. This seems to be an inherent problem of common-user facilities, rather than an issue of market power. It also must be noted that negotiations with Impulse over the same terminal were successful. Impulse Airlines noted that:

> … we signed a commercial agreement with Melbourne Airport … on a struck passenger charge, which we thought was fair to get the facility built. (trans., p. 40)

If off-site passenger processing is possible, then the market power of airports in providing these facilities would be diminished. Participants noted that the possibility for off-site provision is limited at present but may grow as technology improves. The ACCC noted in its draft decision on the Virgin Blue access determination that:

> It is difficult to conceive how a number of terminal services (such as the loading and unloading of passengers) could be provided anywhere other than the airport. Certainly some functions can, in principle, already be provided off-site. Indeed in future years, off-site facilities may become more feasible and common. However in the time period relevant to the current analysis, existing or potential off-site terminal facilities do not appear likely to significantly constrain the behaviour of the owners of on-site terminal facilities. (ACCC 2001l, p. 15)

Some inquiry participants have argued that, of the passenger processing facilities, off-site provision is most likely to be feasible for check-in counters. The market power of airports in providing check-in counters is discussed below.

Check-in counters

As already noted, for the airports subject to the price cap, check-in counters are not included in the cap but are monitored (chapter 3).

The degree of market power held specifically in check-in counters depends on the degree of discretion airlines have over what is to be provided, the ability to use other facilities on-airport, and opportunities for off-airport provision of the facilities.

Sydney Airports Corporation Limited (SACL) argued that airlines have a choice about the quantity of check-in facilities used, limiting the market power of airports:

> If charges for use of check-in counters were considered to be too high, airlines would choose to manage their passengers through a smaller number of counters. (sub. DR62, attachment A, p. 1)

If, however, decreasing the number of check-in counters increased passenger processing times significantly, then the willingness of airlines to take this action would be diminished.

Slower passenger processing also could be against the airport's interests. SACL noted that the use of fewer check-in counters 'would clearly also be a concern for airport operators in managing terminal congestion' (sub. DR62, attachment A, p. 1). In addition, slower processing times would decrease the time that passengers have to shop in airport retail outlets. These factors could, therefore, offset incentives the airport operator otherwise may have to increase, above efficient levels, the charges imposed on airlines for check-in counters.

In addition, in Australia, domestic airlines appear to have some on-airport alternatives for check-in. SACL noted that one factor limiting the market power of airports was the 'ability of domestic carriers to check-in passengers at their leased terminals where those passengers are transferring to an international service' (sub. DR62, attachment A, p. 1).

In terms of off-site check-in, this already exists in a number of places overseas (sometimes for international, as well as domestic, passengers) — at Gatwick (Victoria Station), Heathrow (Paddington Station), Hong Kong (Hong Kong Island Station) and Geneva (Cornavin Station), for example.

According to Brisbane Airport Corporation (BAC):

> New technologies and processes are likely to provide alternatives to aspects of the current methods of international passenger processing, eg: electronic check-in, off-airport processing at hotels, in the CBD, on other transport modes (trains), etc. As these technologies and processes evolve, these services are unlikely to continue to satisfy the tests for monopoly infrastructure. (sub. 8, p. 13)

Nonetheless, some participants argued that the potential for off-site check-in currently is limited in Australia. BARA, for instance, commented that:

> It is possible that a few of the larger hotels may establish these facilities. However, they would only cater for a small proportion of passengers. There is no central point where a large number of passengers congregate (such as a train station). Electronic check-in is unlikely to be effective as most international passengers have baggage. The scope for supply-side substitution is extremely limited. It is highly unlikely that a significant non-transitory increase in charges for check-in counters would have much effect on the supply of off-site facilities. (sub. DR54, p. 28)

Similarly, NECG considered that:

> … in some major world cities, a growing range of terminal facilities is being provided at city-centre locations and at connecting railway stations. However, in this specific [Virgin Blue–Melbourne Airport] case we do not believe that an airline would find it profitable to provide *all* services to *all* passengers in this manner, and, therefore, (potential) off-airport terminal facilities cannot credibly be considered to compete in the same market as terminal facilities at Melbourne Airport. (NECG 2001b, pp. 38–9)

Although off-site provision of check-in counters is not likely to be feasible in all cases, to the extent that it is available for some passengers, this may decrease the market power of airports. Nonetheless, the current feasibility of this is likely to be limited in Australia.

NECG (2001b) also considered substitution in terms of location at a nearby airport. However, the lack of nearby airports in most instances means that this is not likely to be a significant source of potential substitution. Moreover, it would appear to be infeasible to locate check-ins at one airport and other passenger processing facilities at another. Finally, once a decision is made to locate at a particular airport in a city, the costs of moving are likely to be prohibitive. NECG (2001b) also concluded that this was not a viable option.

Summing up of market power in passenger processing facilities

Overall, although the market power of airports in relation to passenger processing facilities is not as high as for aircraft movement facilities, airports with market

power will have some market power in the provision of passenger processing facilities.

Of the passenger processing facilities, market power is likely to be least significant for check-in counters. Though counters are necessary, airlines may have some scope to reduce the number of counters used in response to a significant increase in charges. Such a reduction could be expected to have negative consequences for the airport, including terminal congestion and reduced shopping time for passengers. Furthermore, domestic airlines may be able to process some international passengers through their domestic terminals. Finally, check-in counters also are the most likely of the passenger processing facilities to be amenable to off-site provision, although it appears that this potential currently is limited for international passengers in Australia.

6.4 Lounge space (VIP and business)

Lounge facilities refer to business and VIP lounges that airlines provide for their customers. They do not include departure lounges (which comprise part of passenger processing facilities discussed in section 6.3), or the domestic lounges of the airlines that have leases over their domestic terminals.

Lounges are not necessary to airlines or their passengers in the way that aircraft movement and some passenger processing facilities are. Nonetheless, they are part of the service offered by many airlines. The degree of market power that airports hold in the provision of these services depends largely on the extent to which airlines have discretion over the quantity and quality of lounge space that they use.

The behaviour of new entrants in the domestic market appears to show that lounges are largely discretionary. Hobart Airport noted that:

> … Impulse and Virgin are providing evidence that lounges aren't necessary in the scheme of things so I'd argue that we don't have market power in those areas. (trans., p. 328)

BARA (sub. DR54) argued that the degree of discretion over lounges is not the relevant question. Rather, the issue is whether there are substitutes that constrain airport pricing for that service. As discussed in section 6.1, airport pricing can be constrained by a range of potential alternatives, including the availability of off-airport and on-airport substitutes or suppliers, and/or the intensity of demand preference for that service (that is, the degree to which that service is required by users).

Ansett, Qantas Airways and BARA also argued that airlines could not compete effectively without lounge space, since their customers demand it of them. BARA, for example, noted:

> … lounge facilities are … demanded by airline customers and hence it is felt necessary to supply those services to the customers to meet that demand. It's only viable to have an airport lounge and to provide those services if that lounge is in fact in close proximity to the actual gate the passengers are going through. (trans., p. 223)

Given that airports have control over access to areas near the gates, it was argued that they have market power in the provision of this space, enabling them to extract monopoly rents from airlines (BARA, trans., pp. 223–4).

Alternatively, the apparent strategic requirement for airlines to have lounge space could be used by airports as a bargaining tool in trying to resolve other issues with a particular airline. BARA argued:

> … the airport may deny or artificially delay access to space in a terminal required to provide an airport lounge in order to achieve a commercial advantage in other areas (for example, to resolve a dispute with the airport user). (sub. 26, p. 3)

Though this is possible (perhaps even likely), it is unlikely that this type of bargaining strategy is the preserve of airports. In the past, for instance, airlines apparently have refused to lease space pending resolution of disagreements elsewhere.

Further, the price of those facilities may just reflect the opportunity cost of that space for the airport — that is, rentals the airport could earn from any other competitive activity, such as retailing. According to SACL, 'airlines generally prefer windows overlooking the airfield, and locations near departure gates' (sub. DR62, attachment A, p. 1). Given this preference, and the fact that such space is scarce, the opportunity cost may be high. Thus, prices for lounges may reflect a locational (scarcity) rent. Moreover, since the space has a number of uses, it is unlikely that airports would have an incentive to leave some of it unused deliberately, except for future operational uses. The key issue, then, would appear to be whether overall terminal space is constrained — that is, whether expansion is delayed so that scarcity rents can be earned. According to Hastings Funds Management:

> To date Melbourne Airport has concluded a number of successful negotiations in relation to international lounges … with no charges of abuse of market power. (sub. 19, p. 5)

In sum, although certain customer segments may expect business and VIP lounge space from their airline, and this space must be located at the airport, airlines appear

to have significant discretion as to the nature of the facilities, and are therefore likely to be responsive to changes in the price of those facilities.

There currently is no prices oversight of business or VIP lounge facilities.

6.5 Landside vehicle facilities

There has been some debate since privatisation about the composition of landside facilities and the extent to which these are covered by regulation.

For present purposes, landside vehicle facilities can be seen as falling into two broad categories: facilities (such as landside roads) that provide vehicle access to the airport and its terminals; and vehicle services provided landside (such as car-parking services and taxi waiting areas).

Vehicle access facilities

Airline passengers and other airport users (including staff) obviously require access to the airport and its terminals. And, ultimately, only the airport operator can provide such access.

Airline passengers choose the means by which they obtain this access, whether it be in private vehicles, rental cars, taxis, buses, or trains. The operators of these arrival modes, such as taxi drivers and rental car operators, have a choice about whether they operate at the airport at all. However, the importance of airport-related business to their overall business influences to a large extent the degree to which airports have, and could exercise, market power in their dealings with them. In this regard, the Australian Taxi Industry Association noted that airports are the largest single market for the taxi industry (sub. DR61), while the Victorian Hire Car Association (VHCA, sub. DR68) noted that airport transfers accounted for at least 80–90 per cent of the gross income of hire car operators.

SACL acknowledged that it has a degree of market power in relation to front-door access but argued that there are costs in managing kerb-side facilities and that:

> Airports around the world are increasingly realising that kerb side congestion can be a significant problem, and efficient pricing structures can offer a means of managing this. (sub. DR62, attachment A, p. 2)

Melbourne Airport also accepted that 'it has a degree of market power with respect to the kerb in front of the terminal complex' (sub. 7, p. 72) and noted the

importance of pricing to manage congestion (sub. DR66). It argued further that charges on kerb users are justified because kerb users either:

- use other services provided by the airport, for which they should pay; or
- are in competition with other services (such as car rental and parking) for which access is paid.

The mere fact that there are charges for competing services does not necessarily justify charges for kerb use. Charges on competing services may reflect the exercise of market power. Nonetheless, pricing access to ease congestion may be efficient, assuming the airport operator does not constrain artificially the availability of kerb-side roads.

That said, an airport operator may want to shift demand for vehicle facilities to services provided more directly by the airport, such as car parking (as discussed below).

Capital Airport Group (sub. DR75) denied that airports have this incentive. It suggested that, on the contrary, it has tried to improve, not limit, the access of transport modes to Canberra Airport. It pointed to its negotiations with the ACT Government for the removal of Government restrictions on independent (non-Government) bus operators and a second taxi cooperative servicing the airport. Given this, it submitted that it:

> … rejects the suggestion that it would attempt to limit access for land transport operators under reasonable terms and conditions in order to prop up car parking revenue. (sub. DR75, p. 6)

Nonetheless, to the extent that an increase in access charges for competing modes shifts demand (and raises the airport's overall revenue), there may be an incentive for an airport operator to set excessive access charges. Thus, airports have, and may exercise, market power in the provision of vehicle access facilities.

Car parking

Two forms of car parking are provided at airports: facilities for passengers or those meeting passengers, and facilities for staff parking.

The ACCC (sub. 36) argued that all travellers require land access to the airport and, although several arrival modes are available, airport market power in relation to those alternatives gives airports market power in the provision of car parks. It also noted that it had found evidence in its assessment of Sydney Airport's pricing proposal that car parking is a service 'in which airport operators have a significant degree of market power' (sub. 36, p. 87).

However, other participants — such as BAC (sub. 8) and the Australian Council for Infrastructure Development (sub. 28) — argued that airports do not have market power in the provision of car-parking services. They cited competition from other modes and off-airport facilities as effective constraints on any potential airport market power. Melbourne Airport noted:

> Less than 20 per cent of passengers using Melbourne Airport use car parks provided by Melbourne Airport. In addition to the three public car parks provided by Melbourne Airport, Qantas and Ansett provide valet parking and there are at least 6 off airport car park operators. Thus in relation to car parks, airports have little market power … (sub. 7, p. 72)

Examples of rates charged for on- and off-airport car parking at and near Melbourne Airport are provided in box 6.1.

Box 6.1 Car parking at and near Melbourne Airport

There are several car parks at or near Melbourne Airport. Some off-airport operators advertise that they provide short- and long-term parking. The following are indicative rates at car parks on- and off-airport (obtained from the websites of the operators).

- Parking rates at Melbourne Airport's short-term car park (mostly undercover) start at $5 for the first hour, and $9 for 1–2 hours. The hourly rate falls as cars are parked for longer periods — for instance, parking for 9–12 hours costs $22 and for 12–24 hours costs $28.
- Parking rates at Melbourne Airport's (not undercover) long-term car park are $15 for one day, $20 for 1–2 days, $50 for one week, and $98 for two weeks. The third week costs an additional $8. The long-term car park is within walking distance of the terminal, though regular shuttle bus services also are provided. Melbourne Airport also offers undercover 'business parking' near the Qantas terminal that costs $25 per day.
- Some off-airport operators provide undercover or outdoor parking. They provide transport (usually shuttle buses) to the airport terminal (generally a few minutes away) and 24-hour security. They also tend to provide other services, such as car detailing, at additional cost. Rates and rate structures differ across providers. There are at least six providers of off-airport car parking near Melbourne Airport. Examples of rates at two of these providers are given here.
  - One operator has 350 undercover and 450 outdoor spaces. The first day of parking costs $10 (outdoor) or $14 (undercover). This increases to $16 (outdoor) and $21 (undercover) for two days, $48 (outdoor) and $61 (undercover) for one week, and $84 (outdoor) and $106 (undercover) for two weeks. Additional days cost $4.50 per day (outdoor) and $5.50 (undercover).
  - Another operator provides undercover parking at $9.90 per day for the first five days, $8.80 per day for days 6–9 and $5.50 per day thereafter. Thus, the cost of parking would be $19.80 for two days, $67.10 for a week, and $112.20 for a fortnight.

Substitution possibilities for airport car parking appear to be most significant for long-term parking. In some locations, a number of off-airport operators exist, and provide competition for on-airport facilities. The number of off-airport operators appears to be greatest for the larger core-regulated airports (particularly Sydney and Melbourne). This competition is possible because establishing car parks does not appear to require large and lumpy investments. The major investment appears to be in land, which is not sunk. In addition, travellers who potentially would use long-term parking are those most likely to find other travel modes, such as taxis, an attractive and cost-effective alternative.

The direct supply-side substitution possibilities for short-term car parking appear to be more limited because proximity to terminals is likely to be more important for those using short-term than for those using long-term parking. Nonetheless, other providers may emerge — for instance, Delta operated short-term parking near Melbourne Airport (chapter 9), and some other off-airport operators advertise that they provide short- and long-term parking (box 6.1). Further, rates for short-term parking will be constrained to some degree by those set in the more directly competitive long-term parking market. The influence of long-term rates on short-term rates is likely to be strongest for the longer periods in the short-term car park. Nonetheless, there also is likely to be some (if more limited) flow-through to shorter stays.

In addition, unlike long-term parking, many of the users of short-term parking are not airline passengers, but those meeting passengers or driving them to the airport. They have some options about whether to use airport car parks — dropping people off without parking, or arranging to pick them up outside terminals, for instance. The latter has become more viable with the increasing use of mobile phones, allowing passengers to call ‘greeters’ to pick them up as soon as planes land. Melbourne and Perth airports, for example, note on their websites the possibility of setting down and picking up passengers kerb-side. Airports tend to impose conditions on this, such as limiting the time allowed, or stating that cars must be attended at all times (for security as well as operational reasons). In addition, Perth Airport has free five-minute parking in its car park, which would seem to be designed to encourage the dropping off and setting down of passengers.

Nonetheless, to the extent that airports have market power in car parking, it is likely to be higher in short-term parking. Indeed, a study of parking at San Francisco Airport (Kanafani and Lan 1988) found that demand for short-term parking was inelastic, with elasticities higher for long-term parking. Although the authors noted that these results may not hold generally, the study suggests that the market power of airports may be higher in short-term than long-term parking.

Staff may have less discretion than travellers in terms of how they reach the airport and where they park. Taxis are unlikely to be a viable option for commuting so, unless other public transport options are available, most staff are likely to need to drive to (and hence park at) the airport. Thus, it would appear that airport market power in car parking is likely to be relatively more significant in staff car parking.

Has the behaviour of airports indicated or reflected market power in car parking?

Participants cited high airport car-park prices and profits as potential indicators of the exercise of market power — for example, the ability of Sydney Airport to levy and sustain charges in excess of potential competitors (ACCC, sub. 36). However, it is not clear that the Sydney Airport charges cited by the ACCC — around $13 per day for long-term car parking, compared with off-airport charges of $10 per day — reflect market power. It is more likely that the charges largely reflect the greater convenience of parking closer to the airport. In other words, they may reflect locational more than monopoly rents — that is, the value placed on the scarce resource by consumers, not scarcity created by the airport operator (appendix C). Further, it appears that providers of long-term car parking offer somewhat differentiated products (in terms of rate structures and services offered (box 6.1)), complicating comparisons of on- and off-airport car parking rates.

At a more general level, high short-term parking rates sometimes are cited as an indication of abuse of market power. As noted above, airports are likely to have more market power in short-term parking than in long-term parking. Thus, these parking rates could partially reflect the exercise of market power.

However, there also are likely to be locational rents associated with the provision of space close to terminals. In addition, the opportunity costs of having to maintain space that may only be used for intermittent periods may be relatively high. Although this car space may be used later in the day, there may be periods when it is not used, and this opportunity cost would be reflected in the price. This may explain, to an extent, the relatively high hourly rates in short-term parking, not only at the airport but also at most CBD car parks.

Further, as noted above, short-term rates may be constrained to an extent by long-term car parking rates. At Melbourne Airport, for example, the hourly rate falls significantly for those parking for 9–24 hours (box 6.1). Though the cost of parking for a day in the short-term car park is still considerably higher than the long-term full day rate, this partially could reflect the value of proximity to terminals. People also have a choice at Melbourne Airport of paying $28 (short term), $25 (business) or $15 (long term) to park for a day.

SACL argued that airports have incentives to price car parking so as to encourage people to stay in the airport longer and, hence, use retail outlets:

> … airports also have a strong commercial incentive to offer car park customers value for money, as this enhances their dwell time and propensity to consume other airport services. (sub. DR62, attachment A, p. 2)

The extent to which this effect operates in practice is unclear.

Some airports (such as Sydney and Melbourne) have indicated that their car-parking rates are based on benchmarks, such as CBD parking rates. Some participants suggested that using such benchmarks is indicative of the use of market power. Professor Forsyth argued (and the ACCC (sub. 36) agreed):

> If rents are true locational rents, the seller does not set the price with reference to benchmarks (of questionable relevance); rather, the seller takes what the market offers. (sub. 5, pp. 30–1)

However, the use of benchmarks does not, of itself, indicate an abuse of market power. First, it is unlikely that a true monopolist would need to use a benchmark at all. Second, in practice, the discovery of the 'market price' is an iterative process that may be assisted by the use of a benchmark.

One crucial issue is whether airport operators have restricted investment in car parking to increase prices. Since privatisation, several major airports have undertaken and/or plan major car-park expansion. Melbourne Airport, for instance, plans to expand car parks during 2001-02 (chapter 2). To the extent that significant expansion of car-parking space occurs, this would not appear to be consistent with monopoly pricing behaviour, unless demand were expanding more rapidly.[2] Although expansion could coexist with 'monopoly pricing', this does not appear to have been the case.

BARA (subs 26 and 41) noted that staff car-parking charges at Sydney Airport recently increased significantly. BARA questioned whether these increases were justified though it acknowledged that, of itself, an increase of such proportions does not necessarily represent an abuse of market power. Prices could be expected to reflect the opportunity cost of the land, as well as operating costs. It may be that starting prices were inefficiently low.

- Some of the former staff car-parking area was converted to aprons, suggesting that the opportunity cost of the space was high and, hence, that initial prices might have been low.

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2 As noted above, car parks do not appear to be natural monopolies (the costs of establishing car parks appear to be modest). Therefore, it is unlikely that an airport operator would increase capacity strategically to stymie competition from other potential providers.

- SACL argued that even the new prices do not allow full cost recovery (SACL, pers. comm., 25 July 2001). If this were the case, this would suggest that the prices do not reflect an abuse of market power. The ACCC does not appear to have raised concerns about the price increases under its monitoring function.

Further, the market power of Sydney Airport in staff car parking may be reduced by off-airport parking that is of comparable convenience to the SACL facility (SACL, pers. comm., 25 July 2001). In addition, at the time of the price increase, the train link to Sydney Airport might have provided a potential substitute for driving to, and parking at, the airport for workers.

Some participants also suggested that airport market power in car parking could be exercised by limiting access to the airport by companies that provide competing services. As BARA commented:

> … although an airport may lease the management of on-airport car parking facilities, the airport nevertheless has an incentive to deny or limit access to the airport of off-airport parking companies (such as valet parking companies). Such a strategy will increase the demand for the on-airport parking services and increase the value of the car park lease. (sub. 26, p. 3)

As noted above, because the airport operator has sole control over access to the airport, there may be an issue relating to access by competing modes.

Changes in car-park charges since October 2001

On 5 October 2001, the Commonwealth Government announced changes to prices regulation for core-regulated airports (chapter 3). Following this announcement, some airports changed their car-parking rates.

- Darwin Airport increased parking charges from $2.40 per day to $4 per day. The charge is invariant to time spent in the car park.
- Brisbane and Perth airports restructured their charges.
  - At Brisbane, international and domestic short-term parking rates for up to four hours were either left unchanged or fell by between 9 and 14.3 per cent. Long-term rates increased by between 7.7 and 10.9 per cent in the domestic terminal, and by 12.5 per cent in the international terminal.
  - At Perth, short-term parking rates increased by between 3 and 5.5 per cent. For stays over six hours, rates fell by about 3 per cent. Long-term parking rates fell significantly, from about 3 per cent for shorter stays to over 60 per cent for stays over two weeks. Although long-term parking rates for the first three days fell only slightly (from $16.50 to $16 per day), charges after the third day fell from $11 to $2 per day at the domestic terminal. (A

'special rate' applied at the international terminal, where the $2 daily rate was charged after the second day.)

The changes to price regulation did not alter the regulatory treatment of car parking, which remained monitored, for these airports. This does not mean necessarily that the price changes did not reflect the exercise of market power, simply that changes to price regulation did not alter the ability of airport operators to exercise it. Costs also are unlikely to have changed immediately after the regulation was revised, so cost changes would not appear to have driven the changes in rates.

However, the circumstances of airports changed in September 2001 (chapter 2), which may have given rise to the revised parking charges. Ian Kew, the Chief Executive Officer of Darwin International Airport, for example, argued that the events of September 2001 had required a review of operations and charges (Kew 2001).

Whether these changes reflect an abuse of market power is unclear.

- At Brisbane, charges for short-term parking fell, despite the fact that airport operators are most likely to have market power in this area.
- Where charges have increased, ultimately (as noted in chapter 5), the long-term profitability of the change is crucial to determining the degree of market power. This will depend in part on the demand response. On this point, it was commented in relation to Darwin Airport 'that people will now just drop off and pick up passengers and thereby avoid the exorbitant charges' (Taxis 2001).

The significant decrease in some long-term parking rates at Perth Airport generally would not be seen as an abuse of market power. Very low prices — if they were significantly below the costs of providing the service — could sometimes be seen as predatory pricing. Testing for predatory pricing is not easy. Although a number of rules have been suggested in the literature, they can be difficult to apply and there does not appear to be one test that is applicable in all cases (Ordover and Saloner 1989). Nonetheless, in general:

> Markets in which predatory conduct is rational are characterized by imperfect and asymmetric information, scale economies, intertemporal and intermarket cost and revenue linkages, barriers to entry and reentry, etc. (Ordover and Saloner 1989, p. 591)

These conditions do not appear to characterise the market for airport car parking.

The nature of the restructure at Perth may suggest a form of price discrimination. Where market power is likely to be more significant — short-term parking — rates increased. Rates fell where competition is likely to have the most significant effect — long-term parking and long periods in short-term parking.

What can we conclude about market power in car parking?

Overall, airports appear unlikely to have significant market power in long-term car parking. The market power of airports in car parking is likely to be higher for short-term and possibly staff parking, but there also are factors mitigating the extent of market power in these facilities. For example, because many of the users of short-term car parks tend not to be passengers, alternatives to using the car park are available.

To the extent that airports have market power in car parking, it is likely to be constrained as long as landside access for competing operators (of other travel modes, such as taxis, and competing off-site parking services) is available on reasonable terms and conditions.

Taxi facilities and charges

Airports provide a number of facilities for taxi services — such as parking areas for waiting taxis and, in some cases, queue management systems (although taxi companies operate these at some airports). Airports also provide areas for taxi ranks for arriving and departing passengers.

Travellers and taxi drivers have some discretion over their use of these facilities. Passengers can choose to travel to and from the airport using modes other than taxis. Taxi drivers who transport passengers to the airport need to use designated sites. However, they have a choice about whether they pick up passengers from the airport. Anecdotal evidence suggests that many drivers who take people to an airport then move on to other nearby areas rather than wait to collect another airline passenger. In this case, they do not need to use queue management or taxi parking services.

Nonetheless, to the extent that taxis and passengers use taxi services, there are no on-site alternatives to the airport-provided (or approved) queue management system. Viable off-site alternatives also appear limited, although it may be possible to provide holding bays adjacent to, but off, the airport site. In addition, as already noted, there may be issues as to whether an airport may wish to use its control over landside access to shift demand to airport-provided car parks etc. There may, therefore, be some access issues related to the provision and pricing of these facilities.

Since privatisation, four core-regulated airports have levied some form of taxi charge. Of these, only Melbourne linked the charge to a necessary new investment proposal (submitted after the Federal Court ruled ground access fees at Canberra

were charges for landside roads), although Westralia Airports Corporation (WAC) pointed out that it also provided 'substantial facility enhancements to cater for the expressed needs of the taxi industry' (sub. 21, p. 23).

Much of the debate over the charges has surrounded the issue of whether they should be included in the price cap. This rests primarily on the question of whether they should be considered charges for access to 'landside roads'. Discussion of this issue is contained in appendix E. In this section, consideration is given to the issue of the extent to which the levies charged may reflect an abuse of market power.

Because the precise nature of the levies has differed across airports, it is difficult to make a general judgement about whether their imposition reflects an abuse of market power. Nonetheless, some general issues can be noted.

As discussed above, airports have control over the provision of landside access. To the extent that the charges can be considered access charges, they are charges for services for which airports have market power.

The Federal Court decided that the charges imposed by Capital Airport Group were charges for access to landside roads.[3] However, this decision was made in the specific context of charges imposed by Canberra Airport, and the definitions contained in the regulation of the time.

The issue to be addressed here is a somewhat different one. Specifically, do airports have significant market power in the services or facilities for which taxi charges are imposed? From this point of view, some taxi charges might not be considered charges for landside access (in which airports do have market power).

Airports have argued that taxi charges should be seen as charges for facilities provided, or concession charges such as those for retail space. WAC, for instance, argued that:

> … the ground facilities fee is not a levy on taxis or any other commercial vehicles for access to the airport. The fee puts in place an equitable system of charges at the airport for all businesses that derive revenue from the airport market, and is consistent with charges levied on car rental operators that are in place and not regulated. Ground facilities fees are commonplace at airports elsewhere in the world, reflecting the principle that those who benefit from the airport's growth, should contribute to its revenue base. (sub. 21, p. 23)

3 The Federal Court found in a 'line ball' decision that the ground access charges at Canberra related to landside roads. An appeal by the Capital Airport Group subsequently was dismissed (appendix E).

That airports in other countries impose these fees does not, of itself, mean that their imposition is not an abuse of market power. There are other reasons, however, that may suggest that these charges are not entirely charges for landside access.

The charges tend not to be levied on taxis setting down passengers, so they are not levied for all taxi access to the airport.

In addition, costs are incurred by airports in the provision of taxi facilities. According to Melbourne Airport, for example, it incurs about $750 000 per year in labour costs to 'call up taxis and push them through' (trans., p. 171). There also are opportunity costs in the provision of substantial areas for taxi holding bays — for example, the new facilities at Melbourne Airport will provide 790 car spaces — as well as infrastructure costs.

Thus, charging for these services does not, of itself, reflect an exercise of market power. Indeed, Melbourne Airport contended that it was subsidising taxi services by not imposing charges:

> We deliberately took the decision, unlike many other airports, not to impose a taxi charge; to keep on wearing that subsidy ourselves for as long as we possibly could. (trans., p. 170)

Given that both parties benefit in some way from the taxi management system, it may be optimal for some sort of cost sharing to occur. What is an optimal proportion of costs to be shared by each party may change over time.

Hence, even if there is no increase in costs (for example, due to new investment), imposing a new charge, or increasing an old charge, does not reflect necessarily an abuse of market power.

Overall, off-site and on-site alternatives to airport-provided taxi parking facilities are limited but passengers and taxi drivers have some discretion in their use of these facilities. Passengers can use other modes, and taxis do not use the parking facilities if they only set down passengers.

The ACCC (sub. DR55) argued that, for passengers leaving the airport, access to the kerb-side is, of itself, insufficient since taxi parking/waiting areas are required for departing passengers. However, this is not necessarily the case at all airports. At Canberra Airport, for example, if there are no taxis in the feeder ranks, a taxi that has set down a passenger can pick up others directly at the rank, without incurring a charge (Capital Airport Group, sub. DR75, appendix 5). Though not currently used as an option, it also may be possible to have taxi waiting areas outside the airport, with passengers able to call for a taxi when their plane arrives.

On balance, the market power of airports in providing these facilities appears moderate. The ability of airports to impose charges above efficient levels appears to be limited if access for competing modes is provided on reasonable terms and conditions.

Other landside access issues

The Victorian Hire Car Association (VHCA, sub. DR68) suggested that Melbourne Airport has significant market power in the provision of access to its members. It cited in particular its experience in relation to the imposition of the annual 'Vehicle Driver Authority' fee and charges for hire car parking (and the way in which these were implemented).

It also noted changes to the configuration of feeder ranks (which took place under the Federal Airports Corporation (FAC) in 1992) as a demonstration of:

> … Melbourne Airport's ability to effectively control the nature of the hire car operators' physical access. (sub. DR68, p. 5)

The VHCA added that the airport operator reduced physical access for its members, and that there is a:

> … strong incentive for Melbourne Airport, in the absence of restraints, to increase charges and promote more revenue positive suppliers to service this market. (sub. DR68, p. 11)

As already noted, airports have market power in relation to front-door access. However, it seems reasonable that the airport will want to regulate the way in which access to its terminals occurs, for operational and safety reasons. Otherwise, it is likely that kerb-side congestion could be a problem, even where space is not constrained artificially by the operator.

The importance to hire car operators of revenue from the airport may make them less able to oppose price increases. However, the fact that they are operating on small margins and the apparent price sensitivity of their customers (VHCA, sub. DR68) also mean the operators will be very sensitive to price increases. The VHCA itself acknowledged that 'hire car operators are … sensitive to minor cost changes' (sub. DR68, p. 8). This could diminish the market power of airports. That the VHCA was successful in modifying Melbourne Airport's original fee proposal to one more palatable to its members appears to illustrate this.

6.6 Aircraft refuelling

Aircraft refuelling facilities at larger core-regulated airports are built and operated by oil companies as a joint user hydrant installation (JUHI) on land provided by the airport operator.[4] Thus, airport operators directly provide only one element of the refuelling service — the land. It is the lease of airport land to oil companies that raises issues of market power.

Aircraft obviously need fuel but airlines do not necessarily need to refuel each time they land. For larger jets on domestic short-haul flights, airlines may have some discretion over where they refuel. The ACCC noted that 'to minimise airlines' running costs, aircraft generally do not carry more fuel than necessary. As such, aircraft often refuel upon each landing' (sub. 36, p. 82). Nonetheless, some discretion remains.

Over longer distances, including long-haul international flights, on the other hand, refuelling must take place at each landing. In this case, discretion over refuelling at a location is limited to the decision of whether to fly to a particular airport at all.

Therefore, the market power an airport holds in these facilities depends on whether there are off-airport alternatives and the degree to which refuelling can take place at other airports can be substituted for refuelling.

For larger airports, there appear to be limited off-airport alternatives for refuelling.

- Trucking fuel from off-site to refuel aircraft at large, and often busy, airports will be considerably more costly to airlines.
- Safety requirements may preclude trucking as a practical option.
- The alternative of aircraft taxiing to the airport boundary to refuel from an off-site facility would not be an economic or practical option. As the ACCC noted, 'This effectively limits the extent to which potential entrants can compete against the airport for the provision of refuelling services' (sub. 36, p. 82).

The viability of airport substitution for refuelling varies according to the airport and route being considered. If, for example, an aircraft operates Sydney–Melbourne–Canberra–Sydney, it may be possible to choose not to refuel at one of those airports. On the other hand, for aircraft flying between Perth and the eastern seaboard, it is

4 At smaller airports, where the volume of fuel throughput is lower, arrangements may differ. At Hobart, for example, the trucking of fuel to the aircraft is the means by which refuelling takes place. However, the airports where this occurs are those assessed in chapter 5 as not having market power, so this method of refuelling does not apply to the airports assessed in this chapter.

uneconomic not to refuel at each port. Likewise, for international flights, aircraft must be refuelled at each landing. Qantas, in its submission to the ACCC review of fuel throughput levies, noted in respect to Brisbane and Perth airports:

> The only alternative to purchasing fuel from those oil companies is to bring fuel on to the airport by land transport or refuel at other airports and carry the additional fuel to Brisbane or Perth. Either alternative is uneconomic and would increase the cost of fuel to Qantas by 1 to 2 cents per litre and the cost of flying to those ports even more. (sub. to ACCC 1998b, p. 6)

The greater the proportion of long-haul flights arriving at or departing an airport, the higher is the degree of market power that it is likely to have in refuelling. Given this, the isolation of Perth is likely to grant it a degree of market power in refuelling that is equal to its market power in landing. Refuelling in this case is part of the non-discretionary bundle of airport services. In terms of Brisbane Airport, although its most significant domestic traffic is generated from the relatively short Brisbane–Sydney route, a high proportion of its traffic also is generated on longer routes, such as Brisbane–Melbourne and Brisbane–Cairns (chapter 2). Therefore, it also may have a fairly high degree of market power in the provision of refuelling services.

Sydney Airport services a significant proportion of short-haul traffic, which would tend to lower its market power in refuelling. However, its status as a quasi-hub (for domestic and international traffic) may offset this somewhat. On balance, it appears that Sydney Airport has a high degree of market power in refuelling, though this does not appear to be as high as that for Perth Airport.

The other airports may have a less significant degree of market power in the provision of domestic refuelling facilities. For Melbourne Airport, the proportion of its traffic generated from shorter routes, particularly Sydney–Melbourne, is far more significant than from longer routes such as Melbourne–Perth and Melbourne–Brisbane (chapter 2). Darwin would have a relatively high proportion of longer haul traffic, so is likely to have market power in refuelling equal to its overall market power. Apart from having a lower degree of market power overall (chapter 5), most traffic through Canberra Airport is generated from short-haul routes, further diminishing its degree of market power in refuelling. Adelaide also is likely to have a lower degree of market power in refuelling, given its lower market power overall.

Although aircraft on international flights need to refuel in Australia, the degree of market power of any one airport in refuelling is mitigated to an extent by the potential for competition in attracting international services (chapter 5).

That said, airports that have market power are likely to have at least a moderate degree of market power in the provision of aircraft refuelling services. Indeed, Melbourne Airport noted that ‘a case can be made that there is market power with

respect to refuelling services' (sub. 7, p. 36). The extent of market power is likely to be highest for Perth and, to a lesser degree, Brisbane and Sydney airports.

Are fuel throughput levies evidence of abuse of market power?

At larger airports, oil companies pay licence fees and rent to the airport operator for use of the land. A fuel throughput levy has been imposed, in addition to the land rental, at Brisbane and Perth airports.[5] The imposition of the fuel throughput levies has generated a significant amount of debate, particularly about the extent to which they reflect an abuse of market power and hence should be considered 'aeronautical'. The International Air Transport Association noted that:

> … airlines recognise, and accept, that charges and/or fees may be levied for the fuel services required and used to support their operations, but believe that such activities should be treated as 'aeronautical' in nature. (sub. DR56, p. 9)

The issues are outlined briefly in this section and in more detail in appendix E.

Of itself, the restructuring of the charge is not evidence of an abuse of market power. A two-part pricing structure may be a more efficient way of pricing the service. It also may indicate a change in attitude to risk by airport operators. Some airport operators commented that it was reasonable that the risks be shared. Northern Territory Airports explained:

> Rather than introduce higher base lease and licence fees, airports are attempting to share risks by making their own revenues contingent upon fuel sales volumes. (sub. to ACCC 1998b, p. 2)

On the other hand, Shell Australia commented that:

> Shell would be prepared to pay increased fuel throughput levies, if refuelling service charges fell by a similar amount, as this would reflect usage. However, increasing both refuelling service charges and applying fuel throughput charges is an example of abuse of market power. (sub. DR63, p. 2)

The airports involved contended that the fact that they were simply exercising a contractual right to impose the levy meant that they had not abused market power. BAC, for example, argued:

> BACL strongly refutes any suggestion that it has abused its market power because it 'activated' a fee covered by an existing contractual arrangement and determined as reasonable by an independent expert. (sub. to ACCC 1998b, p. 5)

5 The levy at Perth Airport is imposed on the international terminal only.

However, even if they were exercising a contractual right, this does not mean necessarily that the imposition of the charges did not reflect an abuse of market power. In addition, even if the imposition of a charge of that type would not have been an abuse of market power, the level of the charge imposed might have been.

Neither BAC nor WAC, in their submissions to the ACCC, attempted to justify the fuel throughput levies on the grounds of increased costs, the provision of additional services or offsetting reductions in other charges. Thus, the ACCC concluded:

> When considered in light of the lack of any cost related justification for the levies, or offsetting reduction in charges, there is a strong case that the imposition of a fuel throughput levy is taking advantage of market power. (ACCC 1998b, p. 7)

If the imposition of the levies had been justified on cost grounds, claims of abuse of market power would have been more difficult to substantiate. Nonetheless, a lack of cost justification does not, of itself, indicate an abuse of market power, either. It may be that the previous charges were at inefficiently low levels, in which case, there did not need to be an increase in costs to justify an increase in charges.

The critical issue, then, relates to whether the charges — of 0.4 and 0.5 cents per litre for Brisbane and Perth respectively — were above efficient levels. On the basis of the evidence provided to the ACCC review, it is difficult to ascertain whether the charges exceeded an efficient level. The levies resulted in an increase in total revenues derived from refuelling services, but the review presented no information on expected normal rates of return from refuelling facilities. BAC contended that the charge was a 'reasonable market rate' with reference to fuel throughput levies at airports in other countries. This was supported by the determination of the 'independent expert', a Queen's Counsel jointly appointed by the parties (BAC, sub. to ACCC 1998b). Of course, the fact that fuel throughput levies are charged in other countries may simply reflect the exercise of market power by airports in those countries.

In its submission to the ACCC review (quoted above), Qantas implied that it would not be economic to switch to refuelling at airports other than Brisbane and Perth unless the levy increased to above 1–2 cents per litre. A monopolist maximising profits may, therefore, be expected to charge a fuel throughput levy of up to 1–2 cents per litre without losing business. The fact that airport operators are charging considerably less than this amount could indicate that there are economic, political and/or legal constraints on their ability to maximise profits by abusing market power, or that a more gradual approach to changing charges is preferred given the sensitivity of the issue.

On balance, the extent to which airport operators have abused their market power is unclear. Contractual rights are not evidence one way or the other, and the lack of

cost justification for imposing fuel throughput levies does not necessarily indicate an abuse of market power. Moreover, the extent to which the levies are in lieu of the rent component and/or exceed, if at all, an efficient price is not known. That said, because these airports do have fairly high degrees of market power in the provision of refuelling, the potential for abuse remains.

6.7 Maintenance facilities

Two types of maintenance are performed on aircraft: light or emergency maintenance, and heavy maintenance.

Aircraft light/emergency maintenance sites

Light and emergency aircraft maintenance involves unplanned maintenance and is essential to the safety of airline operations. Facilities to carry out these maintenance tasks must be provided at all airports. According to the ACCC, 'for safety and operational reasons the major airlines would be unlikely to fly to airports that did not have light or emergency maintenance facilities' (sub. 36, p. 82).

In addition, it appears that off-site provision of these services generally is infeasible. Again, the ACCC noted:

> As aircraft often stop at airports for only a brief period of time, such repairs need to be done on site. The time wasted, and costs associated with, moving the aircraft to an off-site location for such unplanned maintenance could lead to aircraft delays and significant additional costs to airlines. (sub. 36, p. 82)

Nonetheless, the Department of Transport and Regional Services (sub. 39) argued that airport market power in the provision of light maintenance is low since airlines and third parties, rather than the airport itself, provide the services on a contract or fee for service basis.

If this is the case, any market power of airports would relate to the provision of access to the third parties who directly provide the service. Qantas submitted that:

> In order to provide these services, maintenance workers require access to land within the airport, and aircraft parking space on which to conduct the maintenance. The airport is a monopoly provider of these access rights and aircraft parking locations. (sub. 48, p. 16)

SACL, on the other hand, argued that airports have an:

> … incentive to provide access on reasonable terms for such facilities, to ensure the efficient operation of the airport. (sub. DR62, attachment A, p. 2)

Overall, airports with market power are likely to have some market power in the provision of aircraft light/emergency maintenance sites, though this predominantly is an issue of access to the site to enable third parties to provide the service. It does not appear that access has been an issue so far.

Aircraft heavy maintenance facilities

Aircraft heavy maintenance involves periodic and planned maintenance, such as engine overhauls or refurbishing aircraft. Heavy maintenance is essential to the (safe) operation of airlines.

Although heavy maintenance facilities are required by airlines, the evidence suggests that airlines have a large degree of discretion about the location of these facilities. Indeed, heavy maintenance facilities do not need to be located at every airport because 'aircraft owners can simply schedule the performance of heavy maintenance when aircraft are at an airport that has the relevant facilities' (ACCC, sub. 36, p. 83). Melbourne Airport (sub. 7) suggested that the market for sites can be local, national, or even global.

A number of participants — such as Melbourne Airport, WAC and SACL (subs 7, 21 and 27) — cited recent examples of airports competing for these facilities. These included the location of the Qantas Boeing 767 maintenance facilities in Brisbane, rather than Melbourne or Auckland. In this case, according to Melbourne Airport 'it [is] important to realise that Qantas took an active decision to relocate this activity away from Sydney' (sub. 7, p. 69). In the case of Perth Airport, WAC submitted:

> … maintenance facilities for National Jet Services established on the airport several years ago were competitively secured in the presence of competition from other Australian airports. (sub. 21, p. 31)

It also is feasible for these facilities to be located off the airport site or at nearby 'secondary' airports. Melbourne Airport, for example, noted that Ansett had 'significant maintenance facilities located just beyond the airport boundary' (sub. 7, p. 68). And the ACCC commented:

> It may be feasible for such facilities to be located near the airport site, as long as aircraft operators have access on reasonable terms to a road or tarmac suitable for moving aircraft from the airport to the off-site heavy maintenance facility. For example, Avalon Airport has heavy maintenance facilities which service Qantas aircraft. (sub. 36, p. 82)

Ansett noted that competition between locations for heavy maintenance facilities is driven mainly by competition between governments, not airports:

> In Ansett's Australian experience, whilst airports may offer some incentives to base facilities such as these at their airport, generally, the greatest source of competition and

> incentive packages is between State Governments (due to the employment and state based investment generated etc) rather than the airports in question. (sub. 42, p. 17)

If anything, however, the importance of governments — and other factors outside the control of airports — in the bidding process, may diminish further the market power of individual airports. According to Melbourne Airport:

> … individual airports have little market power especially as location decisions seem to be driven largely by industrial relations issues, availability of skilled labour, and government incentives. (sub. 7, p. 69)

However, once heavy maintenance facilities are established at a particular airport, an airline that decides to relocate its facilities may incur sunk costs. As noted by Qantas, for instance:

> These [heavy maintenance] facilities are substantial, and represent sunk investments, with specialised labour requirements. Qantas acknowledges that in respect of future investment in heavy maintenance facilities, it is able to exercise a degree of choice regarding the location of such future investment (subject to a variety of labour and locational constraints). However, Qantas has little ability to relocate existing sunk investment. In respect of such investments, Qantas is to a degree captive to the market power of airport operators. (sub. 48, p. 16)

This, in the short term, may give the airport at which the facilities are located some market power. Nonetheless, when negotiating the contract for heavy maintenance facilities, airlines also could negotiate long-term pricing and service agreements for other airport services to cover a period that would allow them to recoup heavy maintenance establishment costs. This would reduce the market power of the airport. Overall, it appears that the market power of individual airports for heavy maintenance facilities is negligible.

6.8 Flight catering facilities

Flight catering facilities do not appear to be necessary for all air services. Although they are necessary for long-haul international flights, on shorter flights (and smaller aircraft — ACCC, sub. 36), extensive meals are not required.

Even where they are required, there appear to be viable supply-side substitution possibilities. As the ACCC (sub. 36) noted, the required infrastructure does not have high sunk costs, nor do all airports need to have flight catering facilities. Further, meal preparation can occur off-site, with food transported to the airport. Melbourne Airport noted that:

> Sites for catering facilities may also be provided by the airport but in the case of Gate Gourmet, the largest independent caterer operating at Melbourne Airport, their kitchens are located at a location near to but off the airport. (sub. 7, p. 68)

In this case, the market power of airports appears to be negligible, as long as access to the airport is provided.

The ACCC suggested that access for food transport has been an issue in one case since privatisation. It submitted that:

> In 1999 the Hyatt Hotel complained to the ACCC about Canberra Airport's imposition of an increase in their licence fee of some 800 per cent to transport food prepared in an off-site facility to Qantas aircraft. The charges are now substantial. (sub. DR55, attachment D, p. 4)

The Capital Airport Group (sub. DR75), however, argued that this was not an issue of airport market power. It noted that the structure of the fees changed at this time. Initially, the charge, as levied by the FAC, was applied on a fixed fee plus percentage of turnover basis. In 1999, as a result of negotiation between the airport and the Hyatt, the percentage of turnover component was removed, and the fixed component increased by 250 per cent. However, as a result of the change to the fee structure, the total charges incurred by the Hyatt Hotel fell. The licence fee increased again, when ownership of the caterer changed. This second rise meant that the total increase in the fixed licence fee between 1999 and 2001-02 was about 700 per cent (Capital Airport Group, pers. comm., 26 November 2001). The total charges for the new caterer, however, also appear to be lower than they would have been under the former fee structure.

Although airport operators could limit access, it does not appear that access for flight catering facilities has been an issue to date.

6.9 Freight handling and ground service equipment storage sites

Freight handling equipment is used by terminal operators, handling agents and airlines, and ground service equipment is used for pushing aircraft on the airport apron. Participants noted that the issues relating to freight equipment storage sites and ground service equipment storage sites are similar, so they are dealt with together here.

Ground service and freight handling equipment are used frequently, and their storage is essential to airlines. Storage sites require some area of pavement (with flood lighting), and could include freight or passenger aprons or hard stands.

Determining the market power of airports for these storage sites requires an assessment of the extent to which they can be located off-airport, and the extent to

which airports are likely to constrain the availability of land for these purposes so as to increase rentals above opportunity cost.

In assessing the Australian Cargo Terminal Operators access case (chapter 9), the National Competition Council (NCC 1997) argued that off-airport storage of freight handling equipment is technically possible but commercially infeasible, given the additional costs it would impose on users. Off-airport storage also would reduce operator efficiency and flexibility.

On the other hand, in submissions to this inquiry, airports argued that they do not exercise market power in storage sites, and that economic barriers to entry are not significant. Melbourne Airport, for instance, noted that:

> Terminal operators, handling agents and airlines store a good proportion of this equipment on their leased premises. The remainder is stored in common 'GSE' areas on or adjoining aircraft parking aprons free of charge … some users have approached Melbourne Airport seeking to pay for dedicated sites … There is currently no abuse of market power here and little likelihood as long as land for leased sites remains available. (sub. 7, p. 73)

WAC argued that, though it charges for these sites, these charges comprise a small portion of its aeronautical revenues, and furthermore:

> The adequate supply of airside land at PIA [Perth International Airport] provides incentives for WAC to encourage take-up of these facilities. (sub. 21, p. 31)

Overall, it appears that issues in relation to freight handling and ground service equipment storage sites are predominantly access related. The ACCC (sub. DR55, attachment D) suggested that airports may inhibit access to these facilities. It based this on the Australian Competition Tribunal's finding that:

> In the present matter SACL does want to deny access, or at least regulate access, because it appears to want to control and decide itself who shall operate ramp handling services at the airport. (ACT 2000, para. 12)

It seems reasonable, however, that airport operators would want to regulate access to their site, particularly for safety reasons. It does not appear that they currently have an incentive to exercise market power *per se* in providing access to these facilities.

6.10 Freight facility sites and buildings

Freight facilities are used for the loading, unloading and short-term storage of freight. Though these facilities are necessary to airlines, there appear to be supply-side substitution possibilities.

Both Melbourne Airport (sub. 7) and WAC (sub. 21) noted that there is significant competition between airports for freight facilities, and that airports have little incentive to constrain land for these facilities. Specifically, Melbourne Airport noted:

> Abuse of market power is unlikely at airports where apron and land is available for expanding cargo facilities because it will always be profitable for airports to expand activity … If land is not available, the issue won't arise … (sub. 7, p. 73)

In its assessment of the Australian Cargo Terminal Operators case, the National Competition Council also concluded that it was economic to duplicate a site off-airport, as long as there was vehicle access to the airport. Indeed, the ACCC noted that off-airport duplication 'freely occurs' (sub. 36, p. 84).

Therefore, it appears that airport market power in the provision of freight facility sites and buildings is negligible.

6.11 Waste disposal facilities

Aircraft that land at airports need to dispose of waste such as sewage, aircraft oil and food. Although the service is necessary, it appears that substitution possibilities are significant. As noted by the ACCC, many alternative facilities are available and:

> If the airport operator provides the airlines (or contractors who provide waste disposal services) with reasonable conditions of access to the airport site to enable the disposal of waste, then off-site waste disposal facilities appear a viable alternative. (sub. 36, p. 86)

Thus, airport market power in waste disposal facilities appears to be negligible.

Technically, as with the provision of other services that require access to the airport site, the airport operator could exercise market power by restricting access to the airport. The airport operator is unlikely to do so in the case of waste disposal facilities (although it could award contracts for waste disposal to a monopoly provider).

6.12 Administrative office space

Office space at airports is used by airlines to perform administrative functions and provide facilities, such as lockers and change rooms, for their staff.

Participants (airlines, airports and the ACCC) agreed that airlines need some form of office space at airports. There was, however, disagreement as to the discretion

airlines have over the amount of space they procure for offices and, therefore, the amount of market power that airports have in providing this space.

For example, the ACCC commented:

> With the growth of telecommunications and the development of information technology services, there is a reduced need for administration to be situated in any specific location. Indeed many airlines' administrative functions are not located on airport, but in off-airport offices. In some cases airlines are even undertaking administrative functions overseas because of labour cost differentials. (sub. 36, p. 84)

On the other hand, Qantas argued:

> … there is an issue about how big the offices are, but certainly we need offices … there's a necessity somewhere for … staff to go, and they're sort of a minimum size, given the number of staff that we have at the international airports. (trans., p. 263)

BARA also commented:

> For major international airlines travelling to and from airports in Australia there are no substitutes for office space within the international terminal. International airlines need office space to keep spare supplies including tickets, boarding passes, headsets, etc. As these spare supplies are often required at short notice, off-airport space is not an alternative. (sub. DR54, p. 29)

There also has been disagreement over the extent to which office rentals at airports reflect abuse of market power. Hastings Funds Management, for instance, argued that office rents at Melbourne Airport have not been increased since privatisation 'despite the capacity to do so' (sub. 19, p. 5). In contrast, Virgin Blue argued that 'APAM's [Melbourne Airport's] charges for … office space rental … are substantially above commercial market rates' (sub. 30, p. 17).

Even if office rentals appear significant, the question is whether these reflect locational or monopoly rents. BARA (trans., p. 224) argued that they reflect monopoly pricing, not just locational rents. Professor Forsyth noted that:

> … if airports are setting rents for terminal space with reference to benchmarks such as rents in the CBD, this is symptomatic of use of market power. (sub. 5, p. 30)

However, as noted above in relation to car parking, to the extent that benchmarking is used, this does not imply necessarily that market power is being abused.

Melbourne Airport (sub. 7) commented that users compete for terminal space that has alternative operational or commercial uses. On the other hand, Qantas noted:

> … offices for airlines … tend to be in areas which by and large the alternate use is not retail. They tend to be right up the top in the gods, rather than areas sitting out on the finger where you would be competing with retail. (trans., p. 264)

As discussed in section 6.4, an airport, in allocating a given terminal space to various activities, is unlikely to have incentives to leave space unused (except for potential future operational requirements). Space will be allocated to the most profitable uses, with users paying the opportunity cost of the space. The key issue is whether the airport operator constrains the overall amount of terminal space to earn scarcity rents.

On balance, it appears that, although airlines require some office space, discretion over the amount procured at airports is fairly high, and airport market power is moderate at most.

6.13 Commercial and retail activities

Airports, particularly larger ones, provide space for various retail facilities, including food and beverage outlets, shops (such as duty-free outlets), and advertising.

Participants commented on the significant expansion of retail space that has occurred since privatisation. This, it was argued, indicates that airports do not exercise market power in the provision of retail space. On the other hand, Qantas (sub. 48) argued that airports have significant market power in commercial and retail activities, and earn above normal returns in these activities.

Several factors appear to constrain the market power of airports in the provision of retail and commercial space. First, apart from some last-minute purchases, in most cases, visitors to an airport do not have to make retail purchases there.

Second, when leasing space to businesses, airports compete with other providers of retail space, such as shopping centres. With regard to commercial space outside the terminal, for example, a discount store announced in October 2001 that it was relocating its premises to Brisbane Airport. One of its directors noted that other developers wanted to provide them with the space they needed, but that BAC offered the 'quality product they needed for the long-term expansion of their operations' (Sommerfeld 2001).

Competition in product markets would put a ceiling on the rent a tenant can afford to pay, while remaining viable. Some airports have retail pricing policies to ensure that prices charged at airports are not higher than at equivalent locations. The retail pricing policy at Melbourne Airport, for example, specifies that tenants must charge: no more than the lower of the manufacturer's recommended retail price, or the price charged by comparable retail outlets; or no more than the off-airport store, if the concessionaire operates an outlet off-airport (sub. 7, appendix 4).

Finally, in the case of duty-free outlets, there are not only off-airport options for purchase, but travellers can decide to make purchases at airports overseas, or on flights. The ACCC (sub. DR55, attachment D) argued that competition for duty free is limited by the requirement that off-airport operators remove dockets from purchases at the airport. Its argument appears to be that, because off-airport outlets require some access to the airport, the airport operator could limit or price such access in a way that would limit the competitiveness of off-airport outlets. (The ACCC also noted that the access fee for this increased significantly at one airport. However, the Commission understands that this increase was the first in several years. Moreover, the previous charge had been set by the FAC on a network-wide, and not necessarily commercial, basis.) It may be expected that charges for off-airport operators would reflect the location and quantity of space used. Nonetheless, this requirement for an airport presence may have the potential to reduce competition between duty-free outlets in the city in which an airport is located. However, the off-airport duty-free market in Australia is not insignificant. Further, other options for duty-free purchases remain (particularly overseas).

Thus, retail rents at airports would reflect locational, but not monopoly, rents (appendix C). Melbourne Airport argued that:

> … expansions of space must — quite obviously — be carefully planned and integrated into the logistics of the airport. When licensing to our concessionaires, no undertaking is made not to build more retail space.
>
> Accordingly it seems reasonable to conclude not that commercially imposed limitations on space drive up prices at the airport, but rather that the location drives up the value of sizes that can be hosted there. In this sense, as Kahn reminds us, prices determine the rents that can be charged — not rents prices. (sub. 7, p. 3)

In addition, Melbourne Airport (sub. 7) offered some explanation as to why returns to retail space appear to be higher in airports than in other retail areas. These included the average incomes of international travellers (and thus the product ranges offered) and the longer opening hours of the airport. It argued that, controlling for these factors, returns to retail space at Melbourne Airport are not significantly higher than those of other retail centres. For instance, its international terminal sales of $1.80 per square metre per hour compared with $1.79 for Chadstone and $1.59 for Highpoint shopping centres. As the airport noted, the value of sales in the shopping centres may be lowered somewhat by the presence of lower-priced supermarkets and department stores.

The Commission has not received evidence to indicate that retail rents at airports reflect monopoly pricing.

Overall, it appears that airports have little, if any, market power in the provision of retail space. They compete with other providers of retail space, they do not appear

to restrict retail space, and consumer purchases at airports are largely discretionary. Retail rentals at airports appear to reflect locational rather than monopoly rents.

6.14 Summary

The degree of market power held by airports differs depending on the service being considered. The results of the analysis in sections 6.2 to 6.13 are summarised in table 6.1.

Table 6.1 **Market power of airports in particular services[a]**

Service	*Degree of market power*
Aircraft movement facilities	High
Passenger movement facilities	Moderate/High
Lounge space (VIP and business)	Low
Vehicle access facilities	High
Car parking	Low/Moderate
Taxi facilities	Low/Moderate
Aircraft refuelling	Moderate/High
Aircraft light/emergency maintenance sites	Moderate
Aircraft heavy maintenance facilities	Low
Flight catering facilities	Low
Freight and ground equipment storage sites	Low
Freight facility sites and buildings	Low
Waste disposal facilities	Low
Administrative office space	Low/Moderate
Commercial and retail activities	Low

a This is based on the airports that were assessed in chapter 5 to have market power. Where a range of degrees of market power is indicated (eg moderate/high), this means that market power may vary by airport, or by the particular component of the service in question.

The highest degree of market power is held in facilities that are necessary to users and for which the supply-side substitution possibilities are limited. Thus, where airports have market power, that power is most significant in aircraft movement facilities, vehicle access, some forms of passenger processing facilities and aircraft refuelling. With respect to aircraft refuelling, market power is most significant at those airports, such as Perth, that have a high proportion of long-haul flights.

Market power is least significant in facilities or services for which users have discretion over the quantity or quality purchased and/or there are significant supply-side substitution possibilities. These include aircraft heavy maintenance facilities, flight catering facilities, freight and ground equipment storage sites, freight facility sites and buildings, waste disposal facilities, administrative office space, and commercial and retail activities.

Where service providers potentially compete with the airport in the provision of services, there may be an issue of access if the service must be provided on the airport site.

FINDING 6.1

For those airports with a moderate to high degree of market power, the extent of market power varies across the services provided. It appears to be most significant in aircraft movement facilities, vehicle access, some forms of passenger processing facility and aircraft refuelling. With respect to aircraft refuelling, market power appears to be most significant at Brisbane, Perth and Sydney airports.

Where other providers potentially compete with the airport in the provision of services, access may be an issue if these providers require access to the airport site.

7 Conduct of unregulated airports

Analysis in chapters 5 and 6 concluded that major core-regulated airports possess significant market power in key aeronautical services. In this chapter, the possible pricing and other behaviour of those airports, were they to operate without price regulation of any kind, is considered, along with potential efficiency and distributional effects of such behaviour. In particular, aspects of the commercial environment in which airports operate that are likely to influence their conduct, are explored.

An exploration of these issues is prerequisite to an assessment of whether continued price regulation is needed, and in what form, to prevent airports with market power exercising that power.

Section 7.1 considers the effect of non-aeronautical revenues on aeronautical pricing and investment, incentives for airports to cooperate with other providers in the supply chain and incentives to discriminate in pricing. Also discussed is the possible countervailing power of airlines in their dealings with airports. Section 7.2 draws together analysis in chapters 5 and 6 and section 7.1 to assess the likely conduct of major airports if airport-specific price regulation were removed along with the efficiency and distributional effects of such conduct.

7.1 Influences on unregulated airport pricing

The pricing behaviour of major unregulated airports with market power will be influenced by a number of factors. These include airports' reliance on non-aeronautical revenues, demand uncertainty, and the scope for countervailing power of major airline customers. The ability of, and incentives for, airports to discriminate in pricing may also be important in determining the efficiency costs of any market power.

Non-aeronautical revenues and aeronautical pricing

Revenues from duty-free shopping and other retailing, car parking and property developments are a large and increasing part of airport revenues. Table 7.1

compares average earnings per passenger movement[1] (profit before abnormals, interest, tax, depreciation and amortisation (EBITDA)) from non-aeronautical activities and aeronautical activities at core-regulated airports for 1999-00.[2] As noted in chapter 2, some differences across airports reflect different organisational arrangements, and non-aeronautical revenue for all core-regulated airports includes lease payments received for domestic terminals operated by airlines.

Table 7.1 **Earnings before abnormals, interest, tax, depreciation and amortisation (EBITDA), aeronautical and non-aeronautical services at core-regulated airports, 1999-00**

	Passenger movements	*EBITDA $000*		*EBITDA per passenger $*	
Airport	*'000*	*Aero*	*Non-aero*	*Aero*	*Non-aero*
Sydney	23 097	40 703	147 010	1.76	6.36
Melbourne	15 138	30 348	89 967	2.00	5.94
Brisbane	10 532	15 178	75 837	1.44	7.20
Perth	4 890	8 293	37 321	1.70	7.63
Adelaide	4 201	3 487	30 518	0.83	7.26
Canberra	1 969	1 122	5 119	0.57	2.60
Coolangatta	1 959	5 568	na	2.84	na
Darwin	1 080	306	4 388	0.28	4.06
Hobart	909	1 321	1 244	1.45	1.37
Alice Springs	781	183	1 671	0.23	2.14
Townsville	682	297	2 368	0.44	3.47
Launceston	542	443	1 609	0.82	2.97

Sources: ACCC (2001b–f; sub. 36, attachment A). **na** Not available.

For all core-regulated airports, except Hobart, non-aeronautical earnings in 1999-00 exceeded aeronautical earnings by a significant margin (non-aeronautical earnings for Coolangatta are unavailable). Airports with substantial international passenger movements (Sydney, Melbourne, Brisbane, Perth and Adelaide), on average (unweighted), earned about $6.90 per passenger from non-aeronautical activities compared with $1.55 from aeronautical services. This compared with $2.75[3] and

1 Passenger movements include international, domestic and regional passengers. Because of different spending patterns and differences in the provision of commercial services for different passenger groups (eg airports do not directly earn revenue from retail services provided in domestic terminals leased by major airlines, though some part of the lease payments is linked to throughput), average non-aeronautical earnings per passenger is unlikely to provide an accurate estimate of average earnings from different passenger groups.

2 These estimates differ somewhat from operating profits presented in chapter 2 because depreciation typically is proportionately lower for non-aeronautical services.

3 Excluding non-aeronautical revenue per passenger from Coolangatta Airport.

$1.05 respectively for the smaller core-regulated airports, without significant (or any) international traffic.

Airport pricing with demand complementarities

As discussed in appendix C, *provided* non-aeronautical earnings are directly linked at the margin to passenger traffic growth and the price elasticity of demand for aeronautical services is not zero, airports will have an incentive to encourage additional passenger throughput (and therefore increase their profits) by reducing aeronautical charges below the level they would be without the non-aeronautical services. This point was acknowledged by the Board of Airline Representatives of Australia (BARA):

> The interdependencies combined with the economic rents achieved on non-core airport services acts to limit the likely increase in the charges for core airport services in the absence of effective regulation. (sub. 41, p. 15)

In similar vein, the UK Civil Aviation Authority (CAA) observed that:

> … the airport itself has incentives to set aeronautical prices to reflect demand complementarities. Where complementarities are important … the airport will have strong incentives to set low aeronautical charges in any case (particularly if they are able to price differentiate effectively). Therefore any potential loss of economic efficiency is likely to be substantially reduced, and needs to be set against the presumption that scope of economic regulation should not be unnecessarily wide unless the efficiency arguments in favour are compelling. (CAA 2000f, p. 17)

Moreover, provided profits from non-aeronautical services reflect locational rents rather than monopoly profits,[4] economic efficiency will be enhanced by such pricing — locational rents earned in non-aeronautical activities create no efficiency distortion.[5] As Starkie observed:

> … for a profit-maximising airport company with market power, the effect of the demand complementarities linked to the locational rents, is to attenuate the normal,

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4 That is, provided airports do not constrain artificially the provision of space for non-aeronautical facilities, profits earned from providing such space will reflect the inherent scarcity of land proximate to airside activities.

5 To the extent that profits from non-aeronautical activities derive from the exercise of market power, the efficiency loss arising from monopoly pricing in these activities must be balanced against any efficiency gain from reducing aeronautical charges. However, as discussed in chapter 6, evidence suggests, for most activities classified as non-aeronautical, that the degree of market power held by the airport is likely to be low. It should also be noted that, because economic efficiency can be enhanced by complementary pricing of aeronautical services, this does not imply that single-till regulation (which, at the limit, involves a transfer of all locational rents) must promote efficiency further (appendix C).

> downward pressure on profits that arises when increased air traffic volumes are at the expense of lower prices for the use of runways and terminals … In other words, airports have good reason to limit the extent to which they exploit market power. (Starkie 2001a)

According to Tretheway (1996), because of these complementarities, the airline 'customer' also becomes a 'partner' of the airport. Whether, as a result, average aeronautical charges remain above their stand-alone, cost-recovering level or fall below it (towards marginal cost) will depend on the size of marginal, non-aeronautical net revenues, relative to the airport's profit-maximising, stand-alone aeronautical price.

While the data in table 7.1 indicate the overall significance of non-aeronautical earnings to airport operators, to gauge possible implications for unregulated aeronautical pricing, several qualifications are in order.

- The earnings per passenger reported are average, rather than *marginal* net earnings. Though some non-aeronautical revenues are raised in a way that is directly related to additional passenger throughput (for example, retail concession fees), some are not. Hence, average non-aeronautical earnings may overestimate earnings per additional passenger.
- The classification of earnings into aeronautical and non-aeronautical in part reflects current regulatory arrangements. Estimates of non-aeronautical earnings, for example, include lease payments for the space occupied by domestic terminals operated by airlines. If these terminals were operated by the airports, then terminal charges would be classified as aeronautical revenues. (Offsetting this, however, the airport would then directly earn revenue from any non-aeronautical activities conducted within the terminal.) In addition, some aeronautical-related revenues included in these non-aeronautical estimates may contain elements of monopoly rents though, as discussed in chapter 6, market power in most non-aeronautical activities appears to be low.
- Some fixed costs may be included in cost estimates. This would mean that reported average earnings will tend to underestimate marginal earnings. On the other hand, some costs excluded from EBITDA calculations may be marginal costs (for example, some depreciation).

Notwithstanding these qualifications, given the magnitude of these largely passenger-related profits, it seems reasonable to conclude that the incentive for unregulated airports to increase aeronautical charges is likely to be dampened, though it is difficult to be precise about the magnitude. That said, not all passenger groups are likely to be equally profitable for an airport on the non-aeronautical side.

In this regard, Virgin Blue submitted that:

> … its customers are likely to generate much less non-aeronautical revenue for airports than the passengers of full-service airlines. This is because Virgin Blue passengers:
>
> - are exclusively domestic, and do not engage in duty-free shopping;
> - use terminals that are owned by the airports (and therefore counted as aeronautical revenue, in contrast to lease payments from airline-owned terminals), are significantly smaller and have a significantly reduced range of concessions; and
> - are generally more value-conscious and seek to minimise overall expenditure at airports. (sub. DR74, pp. 3–4)

On the other hand, Virgin Blue passengers, on average, are also likely to be far more responsive to airport charges, as noted in chapter 5. This means that even if Virgin Blue passengers do spend relatively small amounts at airports, airports could still increase their profits by targeting reductions in aeronautical charges.

Earnings per passenger appear to be much higher for international passenger movements than for domestic movements because of duty-free shopping and also because airports do not operate domestic terminals leased to major airlines. Average revenues from retail sales and car parking per international passenger at Sydney Airport are reported to be $13.65 and $2.19 respectively; domestic passengers are reported to spend around an average $1.46 per passenger on car parking (Chanticleer 2001).

Airports will have an incentive to target aeronautical price reductions to the more profitable passenger groups. (Tretheway (1996) noted that Vancouver Airport linked into airline loyalty programs, awarding frequent flier points to car parkers.) An airport also will have an incentive to offer price discounts only to marginal flights/passengers to retain infra-marginal profits from aeronautical services.[6]

Where an airport faces capacity constraints, or the price sensitivity of demand for aeronautical services is very low, it will have little incentive to reduce aeronautical charges because this would merely serve to reduce profits. Sydney Airport (at least until the events of September 2001) appeared to have excess demand for slots for several hours a day. Sydney Airport is unlikely to offer incentives at peak times. It

6 Network Economics Consulting Group (ACCC, sub. DR55, attachment C) commented that, if airports were effective price discriminators, then the scope for non-aeronautical profits to temper aeronautical prices would be weakened. This would not appear to the case, however. Scope for non-aeronautical profits at the margin would increase incentives for the airport to price discriminate and thus expand throughput further. At any rate, if airports can price discriminate effectively, the efficiency effects of monopoly pricing are reduced or eliminated by the price discrimination.

does, however, offer substantial discounts to 'new' off-peak services (Sydney Airports Corporation Limited (SACL), sub. 27).

If passengers are relatively more sensitive to quality than price, then an airport may attempt to attract passengers (and airlines) by improving quality. They may use, for example, non-aeronautical earnings to finance capacity- and quality-enhancing aeronautical investments (which, in turn, generate more non-aeronautical revenues). Melbourne Airport commented that 'high levels of customer satisfaction drive greater turnover of discretionary expenditure in airports and this is highly profitable' (sub. 7, p. 9).

Apart from off-peak discounts at Sydney Airport, the Commission understands that several core-regulated airports have offered assistance (pecuniary and non-pecuniary) to both domestic and international carriers to increase scheduled flights. Kuala Lumpur International Airport is reported to have waived landing and take-off fees for flights with more than a 25 per cent load factor, in order to boost traffic (Cheesman 2001).

Melbourne Airport (sub. 7) advised that it provided assistance for market development for airlines because the cost of gaining market acceptance is regarded as a barrier to entry for carriers. To encourage additional flights to Canberra post-September 2001, that airport introduced various incentives (sub. DR75). That such incentives have been, and continue to be, offered by these and other airports suggests that airports consider that at least some airline demand is not highly inelastic.

However, given price caps on aeronautical prices (under which prices have continued to a significant extent to reflect the Federal Airport Corporation's (FAC) single-till pricing), scope for *general* aeronautical price reductions is likely to have been limited. Airports also may be disinclined to reveal discounts because of:

- the impact on their commercial relations with other airlines;
- a concern that being seen to be pricing below the cap for some users may lead a regulator to set a lower cap in subsequent regulatory periods; and
- commitments regarding non-discrimination between international carriers.

The effect on aeronautical prices

BARA (sub. 41) commented that even with the influence of non-aeronautical revenues, in the absence of price regulation, aeronautical prices are likely to be significantly higher than current levels.

In similar vein, Network Economics Consulting Group (NECG), acting as consultants to the ACCC, noted:

> The PC's conclusion that airports will have an incentive to reduce the prices of aeronautical activities below the stand-alone profit-maximising level does not appear to be robust. (ACCC, sub. DR55, attachment C, p. 13)

NECG supported its conclusion on the grounds that:

- potential monopoly profits from aeronautical services would far outweigh the potential for profits from non-aeronautical services; and
- passenger numbers are likely to be unresponsive to aeronautical charges.

Taking the second point first, as noted above and in appendix C, the Commission acknowledges that non-aeronautical profits will moderate stand-alone profit-maximising aeronautical prices only if such profits are strongly linked to aeronautical throughput and if such throughput is responsive to (effective) price reductions. In the Commission's assessment, evidence of incentives being offered by airports to encourage additional services at the margin (with and without price caps) suggests that most airports consider that airlines *are* responsive to such incentives. This fact, combined with evidence that a substantial proportion of non-aeronautical revenue is linked directly to passenger throughput, suggests that airports will have an additional incentive to encourage passenger growth by offering price reductions and other incentives.

As to the magnitude of the effect of such incentives on prices, the absolute size of any price reduction will be a function of the absolute size of the marginal profits from non-aeronautical services. The effect in percentage terms on aeronautical prices will depend on the (unconstrained) market power of the airport in aeronautical services. This, in turn, will depend on the elasticity of the demand function for aeronautical services at that airport.

NECG suggested that non-aeronautical profits will have only a modest effect on profit-maximising aeronautical prices because non-aeronautical profits are likely to be small relative to *potential* monopoly profits in aeronautical services. In addition to an apparent assumption that demand for aeronautical services is unresponsive to price changes over a wide range, this assessment appears also to be premised on a view that non-aeronautical profits will be low because non-aeronautical services are subject to competition.

Even for those airports that the Commission has found to have significant market power (chapter 5), demand is unlikely to be 'extremely insensitive to price' as asserted by NECG (ACCC, sub. DR55, attachment C, p. 11). Though the major market segments for these airports are likely to have *relatively* inelastic demands,

even consumers in these market segments have substitution possibilities. Elasticities could increase significantly as prices increase, constraining the scope for any large changes in airport prices. Put another way, the demand curve facing airports may not be very steep over the entire range.

The Commission agrees with NECG that most non-aeronautical services (car parking, retailing and so on) are supplied under reasonably competitive conditions (chapter 6). However, the airport derives rents from these activities not by restricting their supply to raise the price of the relevant services, but because airport land suitable for these potentially valuable activities is inherently scarce. Evidence suggests that associated locational rents, linked to passenger volume, are substantial in total and at the margin at the major Australian airports.

FINDING 7.1

Profits from non-aeronautical activities at most core-regulated airports appear significant, especially when compared with current earnings from regulated aeronautical charges. Though this earnings disparity may be expected to be somewhat less if price regulation of aeronautical services were removed, there is an incentive for airports to temper prices for aeronautical services (particularly for additional services and new entrants), improve quality and/or increase aeronautical capacity to encourage passenger growth and non-aeronautical revenue. The magnitude of non-aeronautical earnings suggests that the effects on aeronautical prices would be significant.

Demand uncertainty and supply-chain linkages

Demand for a particular airport's services is derived from the demand for air travel to that destination. The demand for air travel, in turn, is derived from the demand for business meetings, holidays, family visits and so on to that destination/region. Airports therefore are susceptible to changes in the relative attractiveness of the community and region they serve. Thus, though airports' market power, to a large extent, relies on the relatively small effect of an increase in airport charges on ticket prices, as small links in a very long supply chain, airports may have some incentives to cooperate with other providers (for example, in the tourism and aviation industries), especially when this cooperation is likely to reduce demand uncertainty.

For airports that serve very large population centres and a variety of market segments (for example, business, domestic and international air travel), the effects of a downturn in one market segment may be cushioned by other, more resilient, segments. Nonetheless, as discussed above, large capital city airports appear to derive particular profit from spending on non-aeronautical services by international

tourists, and could be vulnerable to any reduction in that market segment. For some smaller airports that are heavily reliant on inbound tourism, for example, a shift in consumer preferences could have even more severe consequences for the airport.

By itself, an airport can do little to prevent a substantial shift in preferences. Even zero landing charges are likely to have little effect in this instance because the shift in preferences would dominate any response to lower airport charges. An airport can, however, work with local tourism authorities and other input providers, including airlines, to promote and improve the attractiveness of the city/region in which it is located, with a view to reducing demand uncertainty.

Melbourne Airport commented that it 'has been in active partnership with successive Victorian Governments in developing markets both to and from Melbourne' (sub. 7, p. 12). Hobart Airport observed:

> The privatisation of the airports has, to a significant degree, promoted the commercial reality that there is an inter-relationship and reliance that needs to be fostered between government infrastructure, transport and tourism agencies, tourism operators, the airlines and AOCs [Airport Operator Companies]. (sub. 11, p. 1)

In similar vein, Australian Airports (Townsville) commented that it:

> … is a small private company which focuses on providing quality services at a low cost whilst returning value to the company and its shareholders. Its approach to competition *vis a vis* other airports is directed at supporting its local business community in attracting new development to the region. In that regard we offer a service that is priced below the 'competition' and to that extent should support local community economic goals. (sub. 14, p. 14)

To the extent that airports seek to cooperate with others in the supply chain, and governments, to encourage increased tourism and air travel, it is unlikely they would undermine this medium- to long-term growth strategy by setting very high airport charges. The Motor Trades Association of Australia Superannuation Fund (MTAA Super Fund) observed that:

> A catch-phrase might be 'airports do not compete, *destinations* compete'. A city such as Brisbane, bidding to host a major conference or event is pitting its package of airport, hotels, conference facilities and entertainment against the packages from competing destinations, not only in Australia but around the globe. The airport, as a facilitator of tourism and trade must remain competitive to ensure success. (sub. 22, p. 36)

It also is interesting to note that several State Governments submitted that they had developed cooperative relationships with capital city and regional airports in order to develop air services to their regions.

The Queensland Department of Tourism, Racing and Fair Trading (DTRFT) noted that:

> There is active realisation amongst most operators that airports are derived demand assets and are not an end in themselves, but rather an access point to a region or destination …
>
> DTRFT is an active partner with a number of these airports in Queensland and jointly develop detailed business cases to develop air services to these and other regional ports. (sub. 6, p. 4)

The South Australian Government also noted that it has:

> … developed a cooperative and effective working relationship with Adelaide Airport Limited and its airline customers to help facilitate air services growth. (sub. 33, p. 1)

That privatised airports have sought and maintain such relationships does not sit well with them exploiting whatever market power they may have.[7] Of course, some airports may consider factors affecting their long-term growth potential to be outside their sphere of influence. In these circumstances, whether the outlook is optimistic or pessimistic, they may have little incentive to cooperate with other providers or to temper their pricing today with a view to longer-term pay-offs.

Countervailing power of airport users

Countervailing power is the ability of a buyer or buyers to constrain the prices of a seller with market power to less than would be charged if buyers were 'small' and uncoordinated. In principle, the outcome of dealings between two parties with market power is indeterminate *ex ante*; but, to the extent that an airline or another airport user is able to place pressure on an airport to price at a level more consistent with efficient prices, economic efficiency is enhanced.

This issue has elicited diverging views from inquiry participants. On the one hand, several airport operators argued that airlines possess significant market buying power. On the other hand, airlines submitted that the absence of alternatives has meant that they have little ability to influence prices of aeronautical services. According to Adelaide Airport Limited (AAL):

> Adelaide Airport Limited is not able to abuse any market power that it may have in the domestic market as AAL's main customers, Qantas and Ansett, hold significant

[7] It is feasible that an airport with market power could cooperate with other providers and organisations to increase demand in order to charge higher prices and earn higher monopoly profits. But once that strategy became apparent, it is unlikely that the cooperation would continue.

> countervailing market power. Put simply, Qantas and Ansett are much more important for Adelaide Airport than Adelaide Airport is for Qantas and Ansett. (sub. 20, p. 1)

Australian Airports (Townsville) argued that smaller airports were particularly disadvantaged in negotiating with airlines:

> In addressing this matter it is important to identify where the balance of power is. AAL [Australian Airports (Townsville)] believes that the balance of power is with airlines by virtue of their size relative to most Australian airports and especially small regional airports. (sub. 14, p. 17)

Similarly, Capital Airport Group (trans., pp. 299–301) cited its difficulties in negotiating agreements with Ansett and Qantas at Canberra Airport to illustrate the airlines' countervailing power.

Airlines presented a contrary view. BARA argued that 'airlines have little or no economic countervailing power when negotiating over airport charges' (sub. 41, p. 16):

> The primary determinant of the relative bargaining strengths of the parties is the value of their outside options. That is, the difference between the profits each party will achieve with and without the transaction being completed.
>
> International airlines make significant investments in developing international routes. A decision by an international airline to commence services to and from Australia and to and from a particular city in Australia involves significant investments. For example, airlines incur costs in identifying a new market opportunity and establishing the business case to fly there, dealing with regulatory requirements, establishing a physical presence which involves establishing offices and recruiting and deploying staff, establishing a sales and distribution network, and promoting the new route. Airlines usually incur losses in the early period of the new route's existence, in the expectation that these costs will be recouped as the route's popularity grows. Many of these costs are unrecoverable if the airline decides to discontinue the service. (sub. 41, p. 16)

Qantas Airways (trans., p. 262 and sub. 48) and Ansett (sub. 42) made similar claims, with which Professor Forsyth agreed:

> Essentially, to run the countervailing power argument, the user has to have a good alternative to the product on offer, so if Ansett wants to fly into Melbourne, to have countervailing power it has to have a very good alternative that it can switch to fairly readily and that's usually not the case in Australia. It can be the case in Europe or in parts of the US but not in most parts of Australia. (trans., p. 59)

The nature of countervailing power in the airports sector

There are several means by which large airport users may influence airport pricing decisions. The main economic weapon for large buyers is the withdrawal or threat of withdrawal of part or all of their demand for the seller's product. Exercising

countervailing power essentially involves game playing between the protagonists and requires the ability to undertake or threaten behaviour that in the short term is not profit-maximising (that is, profits are forgone by not engaging in potentially profitable trades) in the expectation that this will deliver a more profitable, long-term outcome (a better price or service).

In addition to any such economic power, large airlines or airline alliances or associations in Australia and overseas have used their political influence and recourse to the legal system to influence pricing by airports. (Toms (1994) discusses airlines' responses to the introduction of peak charges at Heathrow Airport.) In regard to dealing with Qantas and Ansett, Westralia Airports Corporation (the operator of Perth Airport) stated:

> They have a far greater capacity and a preparedness to be able to take on legal action against us if they feel that there is an incentive at the end of it for them, whereas our shareholders have limited levels of resources and the ability to be able to counter those significant legal actions is certainly constrained at Perth Airport. (trans., p. 325)

However, it is important to recognise that any economic, political or legal power that may be provided to airport users through the current regulatory framework, is not necessarily relevant in assessing the extent of *underlying* market and countervailing power in Australian airport markets. The extent of countervailing power in the absence of price regulation is the relevant starting point when assessing the appropriate degree of airport regulation.

Criteria for assessing countervailing power

Aeronautical services, the area in which airports are most likely to have potential market power, are also the activities where airports face the most concentrated and financially-powerful users. Nonetheless, as noted by Professor King:

> The existence of a single significant buyer does not automatically create countervailing power … To determine if countervailing power is relevant, the analyst needs to consider the bargaining position of buyers and sellers. In particular, it is important to consider which parties will lose most from any failure to reach an agreement to trade the relevant product. For countervailing power to exist in a market that otherwise is deficient in competition, any losses from a break-down in bargaining need to be predominantly borne by the seller. (ACCC, sub. 36, attachment C, p. 13).

There are several indicators of the relative strengths of the bargaining positions of airlines and particular airports. They include the following.

- *The options available to airlines and airports in a particular situation.* If there are other airlines ready to enter routes that become vacant, then the countervailing power of airlines will be weak. If there are few alternative airlines

(or, more precisely, no airlines that could quickly slot into a vacated route), then existing airline operators will be in a stronger position to exercise countervailing power. Where airlines have choices in relation to airports, countervailing power will also tend to be enhanced.

- *The profitability of routes to airlines*. If routes are known to be marginally profitable, then threats of withdrawal may be more credible, particularly if those flights are relatively more profitable to the airports (for example, due to related, non-aeronautical revenues). On the other hand, where routes are known to be profitable (for example, due to strong business demand), the airport will be in a stronger position.
- *The impact of any reductions in demand on airport profitability*. Because airports have high fixed costs in runways and terminals, their profitability will be particularly sensitive to changes in demand. On the other hand, much of the fixed assets of airlines can be moved to other routes or sold. (Nonetheless, both BARA (sub. 41) and MTAA Super Fund (sub. 22) observed that airlines incur substantial sunk costs when establishing new routes, costs that act as a barrier to entry and exit.) In addition, fewer flights and lower passenger (and/or freight) throughput may reduce airport profits from non-aeronautical sources. While the airport will take non-aeronautical profits into account when setting its aeronautical prices, it may be able to target the withdrawal of particularly profitable services to the airport (for example, departing international flights, cargo/maintenance facilities) as leverage to gain further price reductions.
- *The relative size and financial position* of airports and airlines and their respective shareholders. The party best able to sustain short-term loss-making behaviour will be in a more advantageous position.

One difficulty in assessing the extent of airlines' countervailing power is that there is no history, under private ownership, of unregulated operation of major Australian airports and there are few lightly-regulated private, overseas airports. The experience of regulation of airports in New Zealand — a regime that was in part predicated on a view that airlines possess countervailing power sufficient to offset market power of airports — provides some insights (chapter 11 and appendix G). Notwithstanding some deficiencies in that system, major airports and airlines have agreed on price changes and airlines 'have demonstrated a willingness to withhold airport payments and to consider court action' (CC 2001b, p. 76).

Assessing countervailing power at Australian airports

In Australia, aeronautical charges since privatisation have been constrained by the regulatory framework and remain constrained at the major four airports. In

opposing increases in aeronautical prices, airlines generally have operated within this framework rather than exercising any countervailing buying power that they may possess. The form of commercial relationships between airports and airlines is evolving slowly from the earlier model of a government authority dealing with a protected domestic airline duopoly.

The Commission has received fragmentary evidence (much of it confidential) about the exercise of countervailing power from both airlines and airports. Mostly the submissions appear to describe tough commercial negotiations.

Some inquiry participants (for example, Forsyth, sub. 5) suggested that significant price rises at Sydney Airport ('not disapproved' by the ACCC in April 2001) confirmed the absence of airline countervailing power. However:

- these price increases were coming off the very low base of FAC single-till prices (chapter 8); and
- the price increases were 'not disapproved' by the regulator after a lengthy consultation process. This regulatory process — if not all its outcomes — generally is supported by airlines.

It also is questionable whether either market or countervailing power is relevant at Sydney Airport, given that demand for slots has exceeded the permitted 80 movements per hour for several hours each day. Even with the new price increases, prices at these peak periods are likely to be at levels well short of market-clearing levels.[8]

In these circumstances, it clearly would not be credible for an airline to threaten withdrawal of a service for which it holds a valuable slot allocation. But neither is it likely that Sydney Airport would have an incentive to increase prices such that slot utilisation was pushed below the current maximum of 80 movements per hour. Though the value of slots will decline somewhat as the result of approved increases in Sydney Airport charges, airlines (rather than their passengers) will continue to be major beneficiaries of scarcity rents.

Application of the criteria outlined above to Australian core-regulated airports suggests that the *smaller Phase 2 airports* are likely to be more vulnerable to countervailing power of airlines. As discussed in chapter 5, they tend to rely more on the tourism market, in which scope for inter-airport competition (for example, in Tasmania) is stronger. In these circumstances, airlines can credibly threaten to

8 Demand pressures on Sydney Airport have eased as a result of international events and the withdrawal of many Ansett services. This reduction in demand for airport services, especially in the domestic market, is expected to be short term, however.

switch some services to another airport. Such substitution possibilities also will be reflected in demand for an airport's services, but an airline that is a dominant airport customer may be able to do even better by threatening to withdraw a bloc of services.

Smaller airports reliant on one or two major airlines also may be in a relatively weak bargaining position if an airline threatened to withhold payment for a period. While an airport could take legal action and, after meeting certain requirements under the terms of their leases (chapter 3), eventually refuse access to a debtor airline, it could experience a severe cash-flow crisis in the meantime, as well as incur substantial legal costs. On this point, Professor King noted that:

> … [countervailing] power may be increased if the airport itself cannot credibly reduce its output; for example, if the airport is credit constrained and potentially faces cash-flow problems. (ACCC, sub. 36, attachment C, p. 13)

The *larger core-regulated airports* (Sydney, Melbourne, Brisbane and Perth), on the other hand, are particularly significant to airline networks and more airlines offering a range of service levels want to fly to them. Services to and, more particularly, between these destinations are likely to be more profitable to airlines. Scope for airport substitution for domestic flights to these destinations is limited.

In the international market, the scope for airlines to shift some of their traffic between Australian airports may provide them with a degree of bargaining power. The growing importance of airline alliances and code-sharing agreements may also enhance airline bargaining power. SACL suggested that large airports are vulnerable to the group buying power of airlines:

> … individually, and through representative bodies and alliances, airlines have a significant degree of countervailing power. Airports derive a substantial degree of their revenues from [a] comparatively small number of airline customers, who, individually and collectively, are sophisticated and well organised. (sub. DR62, p. 4)

While these alliances are likely to increase airline countervailing power, member airlines often compete within alliances, and alliances compete with each other, which will tend to undermine their bargaining power.

As for the potential impact on profitability, a decline in some services at the larger airports may be more easily offset because of the range of market segments served and services offered. Melbourne Airport (sub. 37) presented analysis to demonstrate that a hypothetical 10 per cent reduction in services to Melbourne Airport by Qantas would reduce the airport's operating profit by around 10 per cent, but the airline's by a mere 0.4 per cent. However, this ignores scope for other airlines to replace some or all of the services withdrawn by Qantas, overstating Melbourne Airport's potential losses, at least in the aviation market that existed prior to September 2001.

The larger airports rely heavily on non-aeronautical revenues, however, and airlines feasibly could threaten to withdraw marginal flights that delivered high profits to airports to obtain lower across-the-board charges. This may be assisted by airline knowledge of airport revenues. Melbourne Airport commented that:

> This is also a game in which there is significant information asymmetry. The airline will have a good idea about how much it contributes to the airport in terms of direct income and may even have some knowledge about the passenger based income derived from retailing, car parks and so on and can be confident that marginal airport costs are low … On the other hand, airports have little information about the economics of individual airline routes. Indeed, it is unlikely that an airport would even know what the next most profitable route was, let alone its profitability. (sub. 37, p. 11)

Airlines also could use the threat to locate discretionary infrastructure (such as engineering and maintenance facilities) elsewhere as a bargaining chip to extract lower aeronautical charges. However, as noted by BARA (sub. 41) and Qantas (sub. 48), this strategy can be used only occasionally, and then only on an *ex ante* basis. Once a facility has been built, the airline is locked in to using that facility at the airport and relative bargaining positions can reverse. However, an airline could lock in lower aeronautical charges via a long-term contract.

Larger airports are also likely to be better able to withstand reduced cash flows from non-payment of fees, for example.

Developments since September 2001

The reduction in Ansett services since that airline was placed in administration, coupled with rationalisation of several international carrier services to Australia, has left Australian airports generally more reliant on the custom of Qantas. Over time, Qantas's dominant position in the domestic market is expected to diminish somewhat as other operators build up their capacity. In the short to medium term, however, Qantas's bargaining position with many airports appears to have been enhanced, at least in relation to the airline's decisions about allocation of aircraft capacity at the margin.

Qantas rejected this supposition, citing announced price increases at Coolangatta, Darwin and Canberra airports, following the removal of price caps at those airports, as evidence of its lack of bargaining power (trans., pp. 551–61). As discussed below, it is not clear that these price increases indicate an abuse of market power. It is correct, however, that a threat by Qantas to reduce domestic services to a destination where there is excess demand for flights to that destination (all existing flights being fully booked) would not be credible. As noted above, the airline's negotiating position is likely to be much stronger in relation to scheduling of additional domestic and international flights.

FINDING 7.2

The countervailing power of airlines in their dealings with major capital city airports appears limited. However, airlines may have a degree of countervailing power even at those airports where there is scope for airport substitution (for example, entry ports for international flights), where airlines form alliances and bargain as a group, or where selective threats can be made to reduce services that are highly profitable to airports.

For smaller core-regulated airports, airline countervailing power is likely to be stronger, due to the commercial strength of major airlines relative to smaller airports, the market segments served by those airports and greater scope for airport competition.

Countervailing power of non-airline users

Apart from airlines, there are other users of airports who may possess some countervailing power. Airport operators lease rental space to specialist retailers who then provide retail services (including food and beverages) to airline passengers and others visiting the airport. The large number of individual retailers and retail chains that may seek these leases suggests there would be little countervailing power in this sector. That said, it is possible that some retail chains may offer goods and services that passengers value highly. In this case, the airport may seek out these retailers, in which case the latter may have some negotiating power.

At any rate, as discussed in chapter 6, airports appear to possess little market power in retail services. A broadly similar situation applies to car parking. Melbourne Airport argued that:

> … airports are unlikely to have significant market power in relation to services provided to non-airline users and as such, a discussion of countervailing power is not particularly relevant. (sub. 7, p. 16)

Several airports have introduced charges for taxi operators picking up passengers at airports (appendix E). As taxi drivers are organised at the State and national level and operate under the auspices of a few large companies, they would seem to have a degree of economic and political power to countervail market power that airports may have with regard to taxi charges. However, the Australian Taxi Industry Association did not accept this proposition:

> We must note that, while there are driver organisations operating within the taxi industry, the extent of their representation of taxi drivers is relatively low and so consequently, is their ability to develop 'countervailing power' in negotiations with airports.

> Similarly, while there are a limited number of large organisations that provide 'taxi brands', these networks have no effective control over the individual taxi operators providing services under that brand. (sub. DR61, p. 2)

Nonetheless, the activities of Melbourne taxi drivers in response to proposals for an airport levy on taxis using airport holding facilities (appendix E) would suggest a degree of countervailing power in this area.

FINDING 7.3

Non-airline users of airports do not appear to have significant countervailing power, though representative bodies acting on behalf of these users may exert some influence.

Airport price structures and price discrimination

As discussed in chapter 4, price discrimination by firms with decreasing average costs allows common, fixed costs to be fully recouped without discouraging marginal purchases (and/or purchasers). Fully-efficient price discrimination requires that each consumer pays a price equal to marginal valuation for the last unit purchased by that consumer.[9] Though such fine discrimination is unlikely to be feasible in practice, to the extent that broad groups of consumers with different elasticities of demand can be identified and kept separate, those with higher responsiveness can be offered a lower price.

If airports with market power effectively could charge different prices for different customers, then the efficiency effects of exercising market power would be reduced because the quantity supplied would increase and may even approach the efficient level. Furthermore, an airport will have a strong incentive to discriminate in its pricing because price discrimination brings higher profits.

As with countervailing power, this issue has brought forth contradictory evidence. The ACCC concluded that:

> … if airports are in a position to price discriminate between different customers, the allocative efficiency losses resulting from monopoly pricing might be mitigated. At the limit, if they were able to perfectly price discriminate, the deadweight welfare losses to society could be eliminated altogether.
>
> However, the Commission [ACCC] considers this irrelevant given practical realities. The evidence to date suggests that airlines and airports have little capacity to price

9 Perfect price discrimination, in the sense that all consumer surplus is captured, is not required for efficiency. Efficiency requires that marginal sales are not forgone.

discriminate in relation to aeronautical services … Furthermore even if they could, the information requirements to enable such pricing behaviour are likely to be extremely high. (sub. 36, p. 7)

On the other hand, Professor Forsyth argued that:

> If it is not a busy airport, it will charge high price levels, but the dead-weight losses from these high charges will be minimised since it will be able to implement a very effective form of price discrimination, through size or weight related charging. (sub. 5, p. 17)

Price discrimination under weight-based charging

Traditionally, airports have levied landing charges on the basis of maximum take-off weight (MTOW) of aircraft. This means that a heavier aircraft pays more to land than a lighter one. Aircraft weight per passenger tends to increase with plane gauge — for example, according to the MTAA Super Fund 'a B737 or an A320 has around 1.5 passengers per tonne (at an 80 per cent load factor), whereas a B767 has around 1.0 passenger per tonne at similar loads' (sub. 22, p. 26). Thus average airport charges per passenger tend to be higher for larger planes. To some extent this may reflect the higher costs imposed on the airport by larger planes, though Doganis (1992) concludes that the relationship between weight-based charges and airport costs is indirect at best.

If larger planes fly long-distance routes, with passengers paying correspondingly higher fares, then MTOW-based charges can roughly assume the properties of so-called Ramsey pricing. That is, airport charges will be levied in inverse proportion to the price elasticity of demand, assuming the price elasticity of demand for airport services is inversely related to the amount of the fare.[10]

This is not to suggest that such price discrimination will be perfect; larger planes (for example, Boeing 747s) may fly relatively low-fare, short routes. The ACCC also commented that weight-based charges do not discriminate among passengers on given flights or among airlines with varying capacities to pay (sub. DR55).

While the Commission agrees with the ACCC that weight-based charging will not deliver *perfect* price discrimination, such pricing can discriminate effectively in certain circumstances. It is interesting to note that the ACCC rejected a proposal by SACL to introduce passenger-based charging for domestic services because it:

> … was concerned that it may adversely impact on competition in the domestic aviation

[10] All else given, the greater the airfare, the smaller will be airport charges as a proportion of that fare, and hence the smaller the price elasticity of demand for airport services (chapter 5).

> market, particularly in relation to new entrants … The concern is that the proposal could reduce competition by disadvantaging low-cost new entrant airlines who carry more passengers per aircraft. (ACCC 2001n)

In other words, in this case, weight-based charging appears to be acting as an approximate form of Ramsey pricing because the carrier flies comparatively small planes with high load factors. Virgin Blue was reported making a similar comment in relation to the introduction of passenger-based charges at Coolangatta Airport (Templeton and Mills 2001).

Though the ACCC is right to observe that weight-based charges cannot discriminate among passengers on particular flights, that task is likely to be performed reasonably efficiently by airlines. A landing charge levied per aircraft will be treated as a fixed cost by airlines (given a decision to make the flight), to be allocated across passengers in a way that reduces the (discouraging) effect on the marginal fare-paying passenger. Thus, as observed by the MTAA Super Fund:

> Airlines' pricing strategies, and their pattern of recovery of fixed costs, mean airport charges are a similar percentage for each fare class and a smaller absolute amount in discount economy fares. It is therefore incorrect to depict changes in airport charges as applying uniformly across all passengers, implying a greater proportional impact on lower fares … Aeronautical charges also have more of the characteristics of fixed costs than variable costs, and any changes will therefore likely be passed on more to higher fare paying passengers. The proportional impact on discount airfares will be smaller as a consequence. (sub. 22, p. 31)

Thus weight-based aeronautical charges combined with airline yield-management can result in reasonably effective price discrimination.

Passenger-based charges

Several core-regulated airports have introduced passenger-based international and domestic common-user terminal charges and some have introduced, or are proposing to introduce, passenger-based landing charges (for example, Sydney and Coolangatta) (chapter 2). This shift to passenger-based charging appears to have accelerated since September 2001. Moreover, these changes seem to have strong, if not unanimous, airline support (see above).

One rationale for the introduction of passenger-based charging for terminal use is that terminal costs are more directly related to passenger numbers than aircraft weight. Thus, passenger charges may provide better price signals to users and providers of terminals about the need for new investment. The shift also may reflect the increasing importance of non-aeronautical revenues to airports based on passenger throughput. A passenger charge provides airports with data on passenger

flows, by airline, and thus scope for encouraging more profitable passenger loads. Tretheway has suggested that 'passenger-based airport pricing also creates incentives for airports to work in greater partnership with air carriers in stimulating primary passenger demand' (Tretheway 1996, p. 40), while shifting some of the risks of lower load factors during economic downturns from airlines to airports.

Though passenger-based charging appears to reduce scope for price discrimination on some margins (for example, aircraft size), scope for discrimination remains (for example, between passengers travelling on different airlines or at different times of day, or between international and domestic passengers). Capital Airport Group (the operator of Canberra Airport) submitted:

> In Capital Airport Group's experience, marginal flights … can be encouraged through the use of passenger-based charges coupled with a discount. Where airlines are uncertain about passenger numbers during the start-up or development phase of a marginal service or route, they have been comforted that aeronautical charges will be 'linked' to performance of the route. (sub. DR75, appendix 1, p. 4)

In short, passenger-based charging does not preclude effective price discrimination.

Start-up and other incentives

As discussed above, many airports also offer low entry prices and/or direct assistance (in cash or kind) to new airlines and new services offered by incumbent airlines. Such deals cannot be attributed to current regulatory arrangements and they suggest that an airport has both the incentive and a reasonable ability to target marginal airline services, subject to the need to prevent 'churning' of existing services as new services.[11]

It is noteworthy that Melbourne and Perth airports, in applying the recent one-off price increases allowed under price caps, have elected to impose the entire allowable increase on domestic movements, with no net increase in charges for international flights (chapter 2). This restructuring presumably reflects the nature of the shocks that affected the two markets in September 2001. The domestic market was hit by a reduction in the supply of aviation services that has required an increase in average domestic fares to ration available capacity. In contrast, demand in the international market slumped, placing downward pressure on fares and threatening viability of several international carriers. These two airports are

[11] While the ACCC correctly observed that international agreements prevent discriminatory airport charges among international airlines, there is evidence that airports instead offer other incentives (for example, marketing assistance). Moreover, these incentives often are available for marginal services of all airlines.

restructuring prices in a way that will favour what, in current circumstances, is the more vulnerable, and presumably more price-sensitive market. (This does not mean that the domestic market will always be less price sensitive than the international market.) At the very least, the recent pricing outcomes suggest that airports are alert to changes in price responsiveness at the margin and, moreover, consider that their charging policies can affect demand.

FINDING 7.4

Airport operators have a strong incentive to discriminate in pricing in order to increase their profits. Evidence suggests that they have scope to do this by applying different pricing structures, including low entry prices and other incentives for marginal flights and new airlines. Coupled with the ability of airlines to discriminate in pricing among passengers, such pricing is likely to reduce any efficiency losses arising either from the need to cover the fixed costs of providing aeronautical services or from the exercise of airport market power.

Pricing at capacity-constrained airports

This section deals with a situation where capacity is constrained by exogenous forces (for example, legislated aircraft movement limits at Sydney Airport). The incentive for an airport to create scarcity by delaying investment is discussed in section 7.2.

Weight-based, or even passenger-based, charging is unlikely to be efficient when there is excess demand for airport capacity, where access to slots (landing and take-off times) must be rationed. To increase profits — in this case, scarcity rents rather than monopoly profits *per se* — a capacity-constrained airport that is not subject to price regulation will tend to move away from weight-based or passenger-based charges towards time-based charging of the scarce services (for example, a fixed fee per slot). Thus, scarce runway capacity may be rationed by higher slot prices at peak times.[12] As noted by Professor Forsyth:

> … where weight based charges are levied at busy, capacity constrained airports, an inefficient pattern of use is encouraged, because low value users are not rationed away in favour of high value users. This happens at Sydney and London Heathrow airports. (sub. 5, p. 14)

Thus, when capacity is constrained, *efficiency* is served by allowing those with the highest valuations to access the facility and effectively denying access to those with

12 What constitutes the peak can be a difficult question, however (SACL, sub. 27).

low valuations. Whether the resulting allocation would promote distributional objectives of the government is another matter.

A capacity-constrained airport (not subject to price regulation) would have an incentive to introduce such pricing — the incentive being the prospect of extracting scarcity rents. It may have an incentive to restrict capacity even further; this will depend on the severity of the imposed constraint relative to the airport's profit-maximising price and volume.

Some participants (for example, ACCC, sub. 36) disputed whether price rationing of excess demand for slots at Sydney Airport would promote efficiency, because slots are already being allocated under a quantity rationing scheme. However, as discussed in appendix H, leaving aside the issues of the regional ring fence (which guarantees certain slot allocations to regional airlines — see chapter 3, box 3.4) and possible protection of other regional users (outside the ring fence), there is no expectation, under the current rationing scheme, that airlines with the highest slot valuations (potentially carrying customers with the highest valuations) obtain rationed slots.[13] Indeed, such an outcome is unlikely.

Thus, even if airport prices still fall short of efficient, market-clearing levels, a move towards those levels is likely to promote a more efficient allocation of slots because some flights will be replaced by others with higher pay loads (for example, through the substitution of larger for smaller planes and the withdrawal of marginal flights). Nonetheless, this is unlikely to lead to significantly higher passenger airfares at peak times because average fares to Sydney Airport at these times will already largely reflect the scarcity value of slots, with the rents accruing to airlines holding those slots. However, some passengers travelling on services that are withdrawn or rescheduled to off-peak periods may be worse off. The transfer of scarcity rents from airlines to airports also could have repercussions for an airline's operations if such scarcity rents are used to cover the fixed costs of services on other routes.

[13] For a given slot allocation, however, an airline will ensure that customers with the highest valuations obtain seats by not offering discounted fares on those flights. While this promotes efficiency, the airlines, rather than the airport or passengers, capture scarcity rents under a slot allocation scheme. It also is possible that an airline will provide some flights to obtain/retain a valuable slot (eg by flying smaller planes more frequently). Though the full current value of slots used in this way will not be realised by the airline, such a strategy will reduce slots available to competitors and 'babysit' them for higher-value use in the future.

FINDING 7.5

At capacity-constrained facilities (where the shortage of capacity is not created or perpetuated by the airport), efficiency requires that capacity is rationed such that consumers with higher valuations of the service obtain access. Where capacity is restricted, airports not subject to price regulation would generally have an incentive to set aeronautical prices that promote efficient use of the airport.

7.2 Conduct of unregulated airports: efficiency and distributional effects

As noted in chapter 4, the principal rationale for price regulation of airport services is the potential for inefficiency through monopoly conduct by unregulated airports. In the light of analysis in chapters 5 and 6, and the preceding sections of this chapter, this section discusses likely pricing and related behaviour of unregulated airports, and the efficiency and distributional consequences of such behaviour.

Likely pricing outcomes if airports were unregulated

Major Australian airports appear to have a high degree of market power in core aeronautical services. In the absence of constraints on airport pricing discussed in preceding sections, there will be an incentive for an airport to use this market power. If it cannot discriminate in pricing, an airport will have an incentive to increase prices above marginal (and average) costs, to the point that marginal revenue and marginal cost are equal.

Any such increase in price will reduce consumption of the airport's services, resulting in the familiar monopoly, deadweight efficiency loss (chapter 4, figures 4.1 and 4.2). Airlines and their passengers will pay more for use of the airport's facilities, allowing the airport to earn monopoly profits. (For a capacity-constrained airport, so long as the restricted capacity is fully used, the profits will reflect the scarcity of capacity, not monopoly profits.)

However, in the Commission's view, for reasons discussed in section 7.1, the 'traditional' full monopoly pricing is unlikely to occur, even for those airports with significant market power. These influences will temper aeronautical price increases. Further, price discrimination, to the extent that it can be exercised, will moderate any adverse efficiency effects.

It is likely, if prices of core-regulated airports were unregulated, that aeronautical charges in most airports would be higher than current levels. In part, this is because

there is fairly strong evidence (chapter 8) that current prices are inadequate for efficient, replacement investment (even with any allowance that airports themselves may make for non-aeronautical earnings). As discussed in chapter 8, current prices at privatised core-regulated airports continue largely to reflect the single-till pricing imposed by the FAC. Thus, though prices may rise in the absence of the current pricing constraints, the relevant test is by how much unregulated prices would exceed efficient prices (given a requirement that privatised airports must be self-financing), not by how much they would be above historic or current regulated prices.

Though care must be taken in comparing airports, the fact that increased charges of the order of 100 per cent at Sydney Airport (to implement replacement cost, dual-till pricing) were not disallowed by the ACCC suggests that there may be a need for significant price increases at other airports to reach 'efficient' average price levels.[14] How far beyond these levels or, indeed, whether aeronautical prices at airports with market power would increase in the absence of *any* airport-specific price regulation, no-one can say with certainty. However, for reasons outlined above, the Commission considers that any price increases would be constrained by a range of market forces, including commercial interests of the airports themselves.

As noted at the outset, examples of major airports operating without regulatory constraint are rare. Airports in New Zealand have operated under a 'light-handed' regulatory regime, while price caps were removed from most Australian core-regulated airports in early October 2001.

The New Zealand Commerce Commission (CC) estimated that Auckland Airport earned an average annual nominal rate of return on aeronautical assets of just under 13.5 per cent between 1989 and 2000 (CC 2001b). Using this estimated rate of return as a benchmark for pricing by unregulated Australian airports, the ACCC suggested that the four largest airports in Australia would increase revenues by $1.4 billion over five years (ACCC, sub. DR55). In rough terms, this implies a doubling of aeronautical charges and revenues. Several comments are in order.

- First, the accuracy of the CC's rate-of-return calculation has been challenged by Auckland Airport on numerous grounds, including that the CC's removal of land bought for a second runway from the allowable asset base is inappropriate

[14] Sydney's landing charges were considerably lower than those at other major airports (albeit offset by a higher international terminal charge). Sydney's costs and asset valuations also may be higher (especially land valuation). Melbourne Airport observed that it 'would not consider a step increase of the magnitude achieved by Sydney Airport appropriate [for Melbourne Airport]' (sub. DR66, p. 19).

(chapter 11). Auckland Airport estimates that its true rate of return is around 8 per cent.

- Second, even on the CC's own estimates, aeronautical prices at Auckland Airport in 2000 were less than 3 per cent above the estimated efficient benchmark price. Given scope for measurement error (and particularly given the problems in valuing airport land), this gap would seem insignificant. Since then, Auckland Airport has negotiated a 12.5 per cent price increase with airlines.
- Third, a critical issue in assessing likely price outcomes in Australia is whether current prices at Australian airports are efficient. Efficiency (and consumers in the medium to long term) may be best served by somewhat higher prices than at present, to facilitate appropriate investment. It is noteworthy that the CC suggested that an efficient target rate of return on aeronautical assets at Auckland Airport was just under 10 per cent (somewhat higher than suggested by the airport itself). This is well above reported rates of return on aeronautical assets at the major privatised Australian airports, which in 1999-00 were reported to range from zero to 3.7 per cent (chapter 2, table 2.4).

Since removal of their price caps on 5 October 2001, several Australian airports (Adelaide, Alice Springs, Canberra, Coolangatta, Darwin, and Townsville) have increased their charges, some by substantial amounts (chapter 2). Coolangatta, for example, announced an increase of 170 per cent. Launceston and Hobart have not increased their charges. Without any knowledge of the impact on airport revenues and profits, it is difficult to say whether these announced price increases represent an *abuse* of market power, in the sense of being unjustified by costs. Most airports that have increased their charges have said they will still incur losses and that the charges will be reviewed in early 2002. While Capital Airport Group (sub. DR75) announced a price increase, it simultaneously introduced substantial rebates in a bid to encourage additional services.

Though the Commission does not consider that it is possible to forecast with any certainty possible increases in unregulated airport charges that would occur without price caps, the ACCC's suggestion (sub. DR55) that profit-maximising prices at Sydney Airport are in the order of $500 per international passenger and $120 per domestic passenger seems implausible. In particular, the calculations do not appear to admit any scope for destination or modal substitution (box 7.1). Sydney Airport, even acting as an unconstrained profit-maximising entity — and any political pressure aside — is unlikely to charge prices at the levels suggested by the ACCC. Nonetheless, it is acknowledged that efficient peak-period charges could be high at Sydney Airport, reflecting the impact of slot constraints.

Box 7.1 Unconstrained pricing at Sydney Airport

Though full details of their derivation are not provided, the ACCC's estimates (sub. DR55) of unconstrained prices at Sydney Airport appear to overstate likely price increases for several reasons.

- The price elasticity of demand typically increases with price. An estimate of point elasticity at the current price therefore should not be used to forecast the profit-maximising price mark-up unless it is known that the price elasticity does not change much over the relevant range.
- In particular, the calculation appears to assume little if any scope for competition from other airports and destinations, yet there is evidence that Melbourne and Brisbane airports, in particular, compete with Sydney for international traffic. In future, Canberra Airport, which is only two hours drive from Western Sydney, will have international capacity and could even compete with Sydney for some domestic traffic. In addition, travellers doubtless would explore alternative travel and communication modes if airport charges rose by such an amount.

Allocative efficiency effects

As noted above, if the price at the margin exceeds the efficient level, then consumption will be curtailed. This efficiency loss will measure the economy-wide loss *provided* private costs and benefits equate with social values. If the use of airports generated negative external effects, then a higher price that deters use could bring net social benefits rather than losses. On the other hand, if a user industry generated external benefits that were not captured fully in the private demand for output of that industry, the negative effect of excessive airport charges would be amplified. (In either case, however, the optimal policy may not be to raise or lower airport charges but rather to target the externality directly. For example, appropriate levies could be imposed on aircraft according to noise levels.)

Several participants seemed to imply that low airport charges are justified by the assistance this renders to the Australian tourism industry (chapter 4). In this vein, BARA (sub. DR54) criticised the Commission for failing to assess economy-wide effects of airport price increases, suggesting that more than 4000 jobs could be lost in the tourism industry if airport prices were not regulated. This figure assumes that international airfares would rise by roughly 2 per cent on average if all core-regulated airports approximately doubled their charges and that a 1 per cent increase

in international airfares would result in the loss of roughly 2000 jobs in the tourism industry.[15]

The calculations also assume that airports do not, or cannot, discriminate among airlines and their passengers in a way that would mitigate any efficiency effects of higher airport charges. Yet there is substantial evidence that they do discriminate in their pricing in a manner that would reduce the effect of any average price increase on marginal users.

Moreover, the modelled rise in airfares is based on estimates prepared by the ACCC in relation to proposed fee increases at Sydney Airport. These increases occurred within the current regulatory regime. In addition, given excess demand for slots at Sydney Airport, it is unlikely that the rise in airport charges will have much effect on fares to and from Sydney at peak times. At any rate, the estimates fail to take into account the effect on fares of yield management by the airlines, which would tend to reduce the impact of higher airport charges on the more price-sensitive users (see MTAA Super Fund, sub. 22). At the very least, the interplay between airport charges and airfares needs to be analysed before modelling an assumed across-the-board fare 'shock'.

Further, while any reduction in consumption of airport services caused by higher charges will affect activity levels in user industries, such partial effects do not measure the *net* effect on the economy as a whole. Indeed, increased airport charges would promote economic efficiency — and national economic welfare — if they encouraged efficient airport service provision and investment.

The Commission has deliberately not undertaken quantitative general equilibrium modelling of the likely effects of unregulated airport pricing.

- For one thing, it is very difficult to determine how airfares would be affected at the margin. In other words, what is the nature of the 'shock' to be modelled? If airport price increases were structured in a way that the margin was not affected significantly, consumption of airport services (and that of services provided by related industries such as tourism) would be largely unaffected. As discussed in this chapter, airports appear to be able to discriminate in their pricing on various margins. And as mentioned above, the effect on fares and consumption of air travel would also depend on airline yield-management strategies.
- While any price increase (or decrease) will have effects on other industries through a variety of linkages, as noted above, these effects of themselves do not

15 The assumed relationship between higher airfares and job losses in the tourism sector appears to be derived from the MONASH model of the Australian economy.

shed any light on the question of whether the price changes promote, or detract from, efficiency. Even if it were considered desirable to subsidise the tourism sector, it is difficult to conceive of a situation where holding airport charges below efficient levels would be the most appropriate means of achieving this.

Overall, the Commission does not consider that general equilibrium modelling would assist in answering the key questions that need to be answered in this inquiry, at least without much more information than is currently available. Any modelling of an assumed price change would beg the question of why that particular shock was chosen. If the Commission modelled a scenario in which prices were increased to an 'efficient' level, or if it modelled a scenario in which consumption of airport services did not change because of price discrimination, it would be open to criticism for contriving the result. Moreover, such an exercise would not shed any light on what might happen to airport prices. In other words, the real debate in this inquiry is about the likely 'shock', namely the extent and nature of any price change at airports and whether such a change would be efficient or inefficient.

BARA (sub. DR54) also suggested, because core-regulated airports no longer are owned and operated on a network basis, that additional efficiency losses would arise due to 'double marginalisation'. Double marginalisation typically refers to the separation of a vertically-integrated production process, where each firm in the chain possesses and exploits market power. Each firm in the production chain takes the price charged by the input supplier as given (including the price mark-up) and then itself prices according to its market power. The result of the cascading effect of higher costs is consumer prices that are higher (and efficiency losses that are larger) than would occur if the production process were integrated. What BARA could have in mind here is, say, flights between Melbourne and Sydney, where both airports separately exploit their market power.

In the case of airports, 'horizontal' separation of ownership has occurred, opening up scope for both separate 'monopoly' behaviour and inter-airport competition (and lower prices) where different airports can act as substitutes (for example, competing as ports of entry for international flights). Such competition would tend to reduce total airport charges below the level charged by a single network owner.

Where demands for different airports with market power are complementary (that is, where a 'pair' of airports must be used for domestic flights), at issue is whether separation of airport ownership is likely to lead to higher prices for (and lower consumption of) such pairs. It is possible, in this situation, that airports compete for profits by independently raising their charges. The net effect could be a higher price being charged for using the pair of airports than would be charged by a single operator, but the joint profits would be lower than the single-owner case. The combined profits of the two airports would be maximised if their combined price

(for using a pair of airports) was the same as for a single owner. For this reason, BARA (trans., p. 535) suggested that airlines could be better off if all airports in Australia were owned by a single monopolist than by several, though they acknowledged that there were other factors involved.

Distributional effects

Aeronautical price increases (at airports with excess capacity) would redistribute surplus from passengers and possibly airlines to airport owners. Any monopoly airport profits would accrue to airport shareholders, some of whom are non-residents. (Most privatised core-regulated airports are partially foreign-owned, the maximum level being 49 per cent — chapter 3, box 3.3.) Airport shareholders also comprise Australian residents, including superannuation funds investing on behalf of Australian contributors (for example, the MTAA Super Fund investments in Adelaide and Brisbane airports (sub. 22), AMP Henderson's 49.9 per cent ownership of Australia Pacific Airports Corporation (sub. 10),[16] and Uni Super's stake in Adelaide and Coolangatta airports (sub. 20)). The 'losers' from higher airport charges would be airline shareholders (comprising residents and non-residents) and airline passengers (both resident and non-resident). Professor Forsyth observed that:

> In the airport regulation situation, it is not a matter of having some specified distributional trade-offs between the different groups. There is little by way of identifying who the gainers and losers are, and what their circumstances are. (sub. 5, p. 11)

The ACCC, however, urged the Commission to undertake an empirical analysis of potential distributional effects. It suggested that:

> Prima facie there is a case to suggest that higher charges would result in such a transfer [from Australian residents to non-residents]. The major airports are up to 49 per cent foreign owned. By contrast only around 10 per cent of passengers using Australia's airports are foreign residents. (sub. DR55, attachment D, p. 1)

The estimate that 10 per cent of passengers using Australian airports are foreign residents would appear to underestimate significantly the impact of higher airport charges on non-residents. This figure accounts for arrivals and departures of non-residents on international flights only. Data for non-residents who take domestic and regional flights are unavailable. If, on average, international visitors take just one domestic or regional flight while in Australia, then non-residents would account

16 APAC operates Melbourne and Launceston airports (through its subsidiaries Australia Pacific Airports (Melbourne) and Australia Pacific Airports (Launceston) respectively).

for 20 per cent of total passenger movements.[17] Moreover, non-resident international passenger movements at core-regulated airports assessed as having most market power and therefore most capacity to raise charges (Sydney, Melbourne, Brisbane and Perth), accounted for around 15 per cent of total passenger movements at these four airports in 1999. International visitors accounted for 58 per cent of all international passenger movements.

While broad groups can be identified as 'winners' or 'losers' from changes in airport charges, a full distributional analysis cannot be undertaken without detailed information about individuals who use and own airports. There is a myriad of complications; for example, some passengers could be airport or airline shareholders, or Australian residents may own shares in foreign companies that own Australian airports or airlines (and some Australian companies may have foreign shareholders). In addition, non-resident airport shareholders are required to pay Australian tax on profits remitted abroad.

As discussed in chapter 4, the Commission has focused on likely efficiency effects to guide its assessment of various regulatory options — an approach that implicitly assumes that 'a dollar is a dollar' to whomever it accrues, provided the recipient is an Australian resident. Because both 'winners' and 'losers' include non-residents, it would be impossible to quantify any net leakage of income abroad due to higher airport charges. On the face of it, there does not appear to be strong evidence that higher airport charges would favour non-residents over Australian residents.

FINDING 7.6

Aeronautical charges at some airports could be expected to rise if unconstrained by regulation, in part because current charges may be below the level required to cover the costs of investment. Whether and to what extent prices rise above levels required for efficient *provision of aeronautical services, as the result of the exercise of market power, cannot be forecast with certainty. However, there is reasonably strong evidence that a range of market influences will moderate any increase in prices and any negative efficiency effects of higher prices. Chief among these are the effects of non-aeronautical earnings and the scope for discrimination in pricing so that airport users are not discouraged from using airport facilities.*

Higher airport charges could redistribute income from airlines and their passengers to airports. The burden of such higher charges would be likely to fall on both Australian residents and non-residents.

[17] This assumes two movements (arrival and departure) per non-resident passenger on each international and local service.

Productive efficiency of airports with market power

BARA argued that airports with market power, if unregulated, are likely to operate inefficiently in not watching costs:

> It [monopoly pricing] will also weaken the imperatives for airports to be vigilant over their costs resulting in further economic waste. (sub. 41, p. 1)

BARA continued:

> Competition provides benchmarks enabling owners to more accurately gauge the performance of management. More importantly, competition disciplines poor performance in terms of low returns and exit from the market. In the absence of competition there is scope for productive inefficiencies. Effective regulation, through acting as a surrogate for some of the cost pressures on a firm facing effective competition, can reduce these costs. (sub. 41, p. 30)

Given the nature of airport supply and demand, there is no competitive benchmark against which to assess an airport's performance. (Indeed, competitive supply — in the sense of many providers — would be a highly inefficient way of providing airport services.)

At issue is the extent to which airport managers will be able to operate inefficiently (and thus reduce potential profits to owners). The airport manager has an incentive to pursue such a strategy to the extent that it delivers non-pecuniary benefits, including excessive 'perks' and a lower level of effort. Several factors seem relevant.

- Given the competitive sale of core-regulated airports, owners will expect managers to deliver at least the returns factored into the bid price. Indeed these performance levels could have been factored into incentive-based contracts with managers. That said, scope for additional profits not factored into the bid price may make the manager's task somewhat easier.
- Owners can benchmark an airport's costs and performance against other airports in Australia and overseas.
- Despite limited privatisation of airports internationally, specialist airport management companies have emerged (for example, Aer Rianta, BAA plc and Hochtief) that offer their expertise worldwide. Such companies could identify an inefficient airport and sell their services to airport owners (several of which are very large fund managers). In other words, there appears to be reasonable competition in the supply of airport management services.

In addition, there is some direct competition between airports due to physical proximity and competition for international flights and special airline facilities (for example, maintenance facilities).

Overall, therefore, privatised airports could be expected to operate in a manner that is no less efficient than other industries in the economy. Moreover, they are likely to operate more efficiently than airports owned and operated by the public sector. Indeed, this was one reason for the sale of airport leases:

> The leasing process should lead to further improvements in the operating efficiency and quality of service of the airports by exposing them to private sector disciplines. (HoR 1996, p. 1310)

FINDING 7.7

Managers of privatised airports with market power are unlikely to have much scope to allow inefficiencies in production.

The level of quality and investment provided by airports with market power

As noted above, unregulated private monopolies that do not discriminate in pricing have an incentive to restrict supply to raise prices. Over time, this would imply that the monopoly will tend to delay investment in order to maintain this artificial scarcity and to maximise profits.

If the monopolist can discriminate in pricing or differentiate investments to suit different users, then the incentive to under-invest will be moderated. For example, an airport might be prepared to build customised terminal capacity solely for a budget airline, because full service airlines are unlikely to wish to use such a facility.

There may be other pressures on an unregulated airport not to delay investment.

- While capacity constraints may generate higher aeronautical charges, they may adversely affect non-aeronautical revenue, much of which is linked to passenger volumes.
- If an airport allows high levels of excess demand to develop and to remain for lengthy periods (for example, by not building an additional runway), then the door may be opened to potential competitors at alternative sites. (A monopolist may even bring forward investment to ward off potential competitors.) Though emergence of a competitor airport in the same location is unlikely, capacity constraints and the curfew at Sydney Airport appear to have worked to the advantage of Melbourne and Brisbane airports, particularly with respect to international traffic. Therefore, an airport that intentionally restricted capacity to obtain scarcity rents may risk losing some business to other airports.

Rather than seeking to delay investment, Qantas argued that:

> Airport operators, on the other hand, have an incentive to overbuild and goldplate airport assets, as their primary business is land and infrastructure construction and management. It is therefore vital that regulatory oversight of capital expenditure is maintained. (sub. 48, p. 22)

However, it is difficult to see why a private airport operator (not subject to price regulation but subject to capital market constraints) would incur unnecessary investment expenditure. If increased investment allows an airport with market power to increase its prices, this must reflect increased willingness to pay of at least some users; otherwise, prices could have been raised without incurring the extra investment outlay.

Some participants also expressed concern that airports not subject to price regulation would allow quality levels to deteriorate. Qantas observed:

> Left unregulated, airport operators can be expected to use their market power through monopoly pricing, diminishing service quality and the imposition of unreasonable terms and conditions of access to the airport. (sub. 48, p. 29)

Quality deterioration might reflect a lack of investment or just cost-saving measures (for example, employment of fewer staff). Essentially this is equivalent to arguing that an airport with market power will allow prices to rise for a given level of quality. The extent to which an airport with market power exploits that power by increasing prices and/or reducing quality will depend on the relative quality and price sensitivities of various users.

An unregulated airport with market power may be cautious about allowing service quality to diminish below levels desired by users. At least some passengers and airlines are prepared to pay for quality, particularly for aeronautical services with a safety dimension.[18] Provided those who value quality can be charged for its provision, an airport with market power is likely to provide that quality.

The link between quality (for example, quick processing and attractive terminal spaces) and non-aeronautical revenues will also play a role. As noted above, Melbourne Airport noted a direct causation between overall airport quality and increased non-aeronautical earnings. With respect to the likely investment and quality performance of unregulated airports, Professor Forsyth concluded that:

> Private monopolies do not necessarily achieve a perfect optimum in their choice on quality level, but there are good reasons to expect that they will choose about the right quality … This will be so because they can convert an increase in quality into

18 Under the terms of their leases and the *Airports Act 1996*, airports are required to meet certain safety and other standards.

additional revenue, since users are prepared to pay higher prices for higher quality. The private airport will be willing to make investments which improve the service to users; such as an extension to a runway which lowers the costs faced by users, because these users will be prepared to pay higher prices. (sub. 5, pp. 17–18)

FINDING 7.8

In principle, airports with market power may have some incentive to delay investment or to allow quality to deteriorate, in order to maximise their profits. However, in practice, to the extent that airports with market power can discriminate in pricing or differentiate products for different users, those incentives will be weakened. The scope to earn additional non-aeronautical profits from higher quality or expanded aeronautical capacity and passenger throughput, will also encourage the provision of appropriate quality and investment levels.

Access provision and airports with market power

As far as airport access is concerned, the experience of new entrant airlines (Impulse and Virgin Blue) on domestic routes is instructive. Though relations between these airlines and airports have not always been cordial, two airports (Melbourne and Sydney, albeit not unregulated) built new terminals to accommodate the new entrants. At least one airport, the Commission understands, offered start-up assistance. This behaviour seems to support the view that a privatised, vertically-separated airport will have an interest in expanding its customer base and passenger throughput, a point acknowledged by the ACCC (sub. 36).

Nonetheless, there are circumstances in which an airport deliberately may attempt to deny access to an airline or another provider, for example, by imposing high charges. Qantas claimed that airports had numerous incentives to deny access:

> Even where the airport operator does not conduct a downstream business itself, it may be economically integrated with the downstream business. For example, the airport operator may decide to grant an exclusive lease of a car park to a car park operator. Through its pricing structure, the airport operator may be able to extract all economic profits from the conduct of the single car park. Effectively, the airport operator is economically integrated with the operation of the car park. Furthermore, it may have no incentive to encourage development of additional car parks. It may also decide to deny airlines or other persons the right to conduct their own car parks (for example the valet car parks currently conducted by airlines).
>
> Secondly, the airport may deny access to a specific service to an airport user in order to gain a commercial advantage in other areas of its business. The airport may use the threat of access denial in order to resolve a dispute with the airport user, or achieve a commercial outcome (such as increased prices) in respect of another airport service.

> Thirdly, if the airport service is suffering a degree of congestion, the airport may simply find it easier to deny access rather than establish mechanisms to deal with congestion and scheduling problems. In other words, the airport would prefer a 'quiet life'. (sub. 48, p. 25)

The ability of an airport to earn excess profits in any activity at the airport depends on the alternatives available to buyers. An airport, therefore, may have an incentive to restrict access to its facilities to limit competition in the supply of those services where some competition otherwise is feasible. As observed by Qantas, this could occur whether the airport operates in the market in question directly or indirectly by selling rights to others to operate a business on the airport. However, some of the examples cited by Qantas do not appear to relate to denial of access as such.

In the Commission's view, there are three broad scenarios in which an airport operator may seek to deny access.

- *Where an airport can earn more by 'selling' monopoly access rights to an airline than providing access to all airline entrants at a lower cost.* In effect, the airport and the airline would collude to monopolise the aviation market (or at least a particular route). In the absence of any scope for monopoly rents to be earned in the aviation market (sufficient to compensate the airport for lost sales), the airport will prefer an open aviation market.
- *Where an airport can earn more by selling a monopoly right to an on-airport service provider (such as a cargo handler) rather than allowing competition in provision of such services.* This scenario also requires the service provider to earn monopoly rents in the relevant market, sufficient to compensate the airport.
- *Where an airport provides services directly (or via a licensee), earning monopoly profits by denying access (for example, to the airport's 'front door') to potential competitors in that market.* For example, an airport may deny or frustrate access to an off-airport car-park provider to earn monopoly profits from its own car-parking operations.

In practice, the first scenario appears less likely to occur than the other two. It relies on the earning of substantial monopoly profits in the aviation market but, notwithstanding recent events, that market appears competitive — or, at least, contestable — over the longer term. Therefore, it is unlikely that an airport would see any benefit in an exclusive deal with one airline. Indeed, the evidence shows that airports have actively encouraged services from new carriers (section 7.1). A variant of the first scenario is that a large incumbent airline could threaten to withdraw some of its business from an airport if the latter offered a discriminatory (low) entry price to a new entrant. In this case, the airport would not be willingly denying access. This scenario also requires the airline, rather than the airport, to

have significant market power and thus significant buying power. Smaller airports would be more vulnerable to such threats.

With regard to the second scenario, though it may be possible to create a monopoly in the supply of cargo-handling services at a particular airport, for example, this will be limited by the scope for airport substitution (which, in the case of dedicated freight, may be substantial). Nonetheless, there has been an access dispute involving access for freight handling at Sydney and Melbourne airports (chapters 9 and 11). Other ground-handling services also require access to the airport. Apart from this case, however, the Commission has received no evidence that airports have sought to frustrate competition in these services. Indeed, Capital Airport Group (sub. DR75) submitted that it actively promoted competition in such services.

The third set of circumstances perhaps describes the most likely access scenario because the airport effectively competes with off-airport providers in certain activities and controls access to the airport. Charging an access fee in excess of costs could allow the airport to raise prices for these potentially competing services. As noted in chapter 6, the conclusion that airport market power in the provision of car parking is likely to be low is robust only if the airport does not use its control over airport access to stifle competition from off-airport car-park providers or providers of competing transport modes. Denial (or frustration) of access to potential competitors may arise from imposing unacceptable terms of access rather than a prohibitive access price (for example, an inconvenient location for the set-down/pick-up point).

In this vein, there has been one access case in which Delta Car Rentals applied successfully for declaration of landside roads at Melbourne Airport under s. 192 of the *Airports Act 1996*. The dispute concerned the location of the 'designated meeting point' for its shuttle-bus service, not the access charge (chapter 9). Arbitration was never sought. Some participants also raised concerns about landside access charges (for example, Victorian Hire Car Association, sub. DR68). As discussed in chapter 6, though airports do have market power in relation to front-door vehicle access, it also seems reasonable that the airport will want to regulate the way access to its terminals occurs, for operational and safety reasons. Apart from the Delta case, there has been no other application for 'front-door' access.

FINDING 7.9

An airport with market power has little incentive to deny or frustrate access to its major customers, the airlines.

An airport with market power may have an incentive to restrict 'front-door' access to off-airport providers of competing services such as car parking, or providers of competing transport modes, though there is little evidence of this occurring.

8 Review of airport price regulation: price-cap and prices-notification arrangements

Chapter 3 provides details of the post-privatisation framework for regulating prices charged for airport services at major (core-regulated) Australian airports. This framework commenced operating in July 1997 for Melbourne, Brisbane and Perth airports (Phase 1) and in July 1998 for the eight other major privatised airports (Phase 2). The original framework was due to operate for five years from privatisation. However, it was substantially amended in October 2001 in response to significant and unforseen falls in aeronautical traffic (Hockey 2001). This chapter and chapter 9 examine the performance of the price regulation regime against the criteria of economic and regulatory efficiency outlined in chapter 4, and the specific objectives proposed for the current airports price regulation when it was first established, reiterated in the terms of reference to this inquiry.

Price regulation applied to the 11 privatised, core-regulated airports is considered in sections 8.2 (dealing with the limit placed on aeronautical prices by the CPI-X price cap), 8.3 (examining price increases allowed above the price cap) and 8.4 (briefly considering changes to the price caps under the October 2001 regulatory changes). Price regulation of Sydney Airport is discussed in section 8.5.

8.1 Introduction

Following privatisation, the same economic regulation framework was imposed on all 11 privatised core-regulated airports. It comprised several inter-related elements aimed at preventing abuse of any market power available to airport operators, while encouraging efficient levels of service quality and new investment. If an airport possesses and may use significant market power then the incentives provided by the regulatory framework, if appropriate, can bring forth improved economic outcomes. However, if the regulation were poorly framed or administered it might detract from the performance of an airport with market power or indeed impede the performance of an airport without market power.

In October 2001, the Government removed price caps from all but the three Phase 1 airports (Hockey 2001). However, at three of the remaining airports, price monitoring of aeronautical charges was introduced to replace price caps. All airport-specific price regulation was removed from the other five privatised core-regulated airports, though they still remain subject to the quality monitoring and access provisions of the *Airports Act 1996*. These new regulatory arrangements are outlined in chapter 3 and discussed briefly below and in chapter 9. Regulation of the government-owned Sydney Airport remained unchanged.

Airports other than core-regulated airports have faced no special economic regulation and are subject to the same regulatory environment as other Australian businesses, in particular the *Trade Practices Act 1974*.

The various elements of the price regulation framework after privatisation need to be considered as an integrated package. It is also important to recognise that the initial regulatory framework explicitly was intended to be a transitional one, aimed at facilitating the change from airport ownership by a government-owned corporation to the more commercially-focused environment of private airport ownership.

Chapter 4 has outlined some principles for efficient pricing and good regulation. For price regulation of airports the Commonwealth Government has stressed the dual objectives of protecting users from abuse of market power and the importance of moving towards price determination by commercial negotiation between airports and their customers with minimum regulatory involvement (chapter 3).

These objectives recognise the importance of the negotiation process in determining an efficient structure of prices and developing alternative service and cost combinations for customers. The Department of Transport and Regional Development (DoTRD) Pricing Policy Paper observed:

> The price cap is designed to be as simple and straightforward as possible, in the interests of minimising the costs of regulatory oversight for both the ACCC and the airport operators, while ensuring appropriate outcomes. (DoTRD 1996, p. 2)

The objectives of not only preventing the abuse of market power, but also minimising regulatory costs, encouraging commercially-negotiated outcomes and facilitating the access of new airlines have been reaffirmed in the terms of reference for this inquiry.

8.2 The price cap: CPI-X and prices notification of aeronautical services

The CPI-X pricing formula (and the associated prices-notification requirements) for aeronautical services was the centrepiece of the price-regulation regime for all of the privatised core-regulated airports from the time of privatisation until October 2001 when it was removed for the eight core-regulated Phase 2 airports. The DoTRD Pricing Policy Paper (1996) indicated that there was some scope for improved performance and lower costs in producing aeronautical services in the early years of private ownership. Due to concern about the potential market power of airport operators in providing these services, the price cap required real reductions in a basket of aeronautical charges to provide incentives to achieve the expected productivity gains and to ensure that they were passed on to airlines.[1]

Box 3.1 (chapter 3) outlines the services included in the aeronautical basket. Aeronautical-related services subject to price monitoring are discussed in chapter 9.

In January 1997, the Federal Airports Corporation (FAC) set new aeronautical prices, to which the ACCC did not object, at its five largest airports, leaving prices at the others unchanged. These charges became the aeronautical prices operating when 11 of the core-regulated airports were privatised in 1997 and 1998. For the five years following sale, the price cap was to set maximum annual weighted average prices, determined by the underlying national CPI, less a discount factor (X) specific for each airport (chapter 3). Low underlying CPI growth has meant that, for most airports, the price-cap formula has resulted in falling maximum average aeronautical charges in nominal as well as real terms.

Aeronautical prices could differ from the allowed maxima but any over-recoveries needed to be made up by the imposition of lower than maximum allowable prices in a later year or years.[2] Within the cap, aeronautical prices could be set by the airport, although any increases were to be notified to the ACCC. This offered some opportunity for airports to adjust their pricing regimes, although changes under price caps have been limited.

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1 The *Prices Surveillance Act 1983* does not provide for legal enforcement of price reductions under the cap. Melbourne Airport (sub. 7) has indicated that, in any event, it considered that compliance with the cap was a condition of sale of the airport lease which it is bound to observe, a view supported by the Motor Trades Association of Australia Superannuation Fund (sub. 22).

2 Some airports have elected to make rebates to users for prices in excess of the cap rather than charge less than the cap in future years. Under-recoveries (that is, prices below the cap) may also be made up in later years.

An important rationale for choosing the CPI-X approach was that, while constraining prices, it provided airport operators with an incentive to improve efficiency, as they are allowed to retain any productivity gains in producing aeronautical services, above those implied in the X factors.[3] In addition, it is potentially a low cost and low intervention approach once the parameters of the pricing formula have been established. As noted, a safety valve was incorporated by allowing under- and over-recoveries of revenue to be rectified in later years.

Inevitably, because it was designed to provide relatively light-handed incentive regulation, on its own, the CPI-X price cap was not attempting to track economically efficient prices over time. Nonetheless, if the starting prices were reasonable and the Xs based on feasible productivity improvements, then, in the absence of significant demand or supply shocks, the outcomes might provide reasonable approximations of efficient prices. In addition, the price cap was scheduled to apply only for a designated time, hence offering the opportunity to remedy inefficiencies in prices after a set period. The Government responded to the significant declines in air traffic in late 2001 by removing the cap for the Phase 2 core-regulated airports and allowing one-off increases above the cap for Phase 1 airports. Chapter 10 discusses issues in resetting price caps.

Starting prices for the price cap

When the FAC took control of 17 federal airports in January 1988,[4] it reviewed airport charges (aeronautical and non-aeronautical) on a *network-wide* basis, with the objective of covering network costs, including capital costs. This led to an increase in landing charges (which then provided around 90 per cent of aeronautical revenue) of about 6 per cent in July 1988, together with significant increases in non-aeronautical commercial lease charges. Over the next three years to April 1991, annual increases in landing charges (incorporating some restructuring of charges) cumulated to a further 23 per cent.[5] In April 1991, the FAC's landing charges were declared for surveillance under the *Prices Surveillance Act 1983* (PS Act).

Landing charges remained constant from April 1991 until January 1997, although there were some increases in other aeronautical charges over that period. In January 1997, aeronautical charges were increased by an average (on a network

3 The rate of increase in CPI also embodies productivity increases across the economy.

4 The FAC purchased a further six airports from the Commonwealth Government in 1989 but sold Cambridge Airport to a private buyer in 1993.

5 This compared to CPI growth between June 1988 and June 1991 of 19.8 per cent and Average Weekly Earnings (ordinary time earnings of full-time adult males) increases of 20.5 per cent over the same period.

basis) of 10.8 per cent — this was not objected to by the ACCC.[6] However, the 1997 price increases were confined to the five major airports — Sydney, Melbourne, Brisbane, Adelaide and Perth — representing an average 12.1 per cent increase for those airports.

The ACCC (1996) observed that, even with the average 13.8 per cent increase originally sought, the FAC believed that the five airports concerned would only just recover all aeronautical operating costs (including depreciation based on 1991-92 asset valuations but no returns to capital) from aeronautical revenues. In its draft decision on Sydney Airports Corporation Limited's (SACL) pricing proposal, the ACCC observed the impact on returns to aeronautical assets of the FAC's pricing policy:

> In the past airport prices were set by the FAC on a single till basis. The FAC adopted a rate of return target for the airport as a whole, and set aeronautical charges at the level required to meet the rate of return target. Since profitability on non-aeronautical services was high, and typically well above the target rate of return for the airport as a whole, this meant that returns on the aeronautical side of the business were low, often negative. (ACCC 2001h, p. 75)

The differential price increases between airports were designed as a first step to more appropriate airport-specific pricing that had been recommended by the Prices Surveillance Authority (PSA 1993). In not objecting to the FAC's January 1997 price increases, the ACCC (1996) also indicated its preference for further location- and service-specific pricing adjustments to improve the efficiency of pricing.

Until the January 1997 increases, landing charges and, where they existed, terminal charges, were uniform across the FAC network. While some airports made losses, these were more than offset by profits from the larger airports. Of the original FAC airports, over time, the number of loss-making units declined from ten (of fourteen) in 1988-89 to three in 1996-97.[7]

The FAC network landing charges in place before the airports were leased were essentially cost-based prices using a single till on a largely network-wide basis. A

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6 These increases were in fees for use of airport terminals, but were charged on the same maximum take-off weight basis as landing fees. The average 10.8 per cent rise compared to an average 13.8 per cent applied for by the FAC (a 15.2 per cent average increase for the five airports for which price increases were sought) and a CPI increase of 13 per cent between the June quarter 1991 and June quarter 1996. There had also been some relatively minor increases in terminal charges between 1991 and 1996.

7 Of the airports controlled by the FAC, Hobart and Cambridge were managed as a single unit, as were Bankstown, Camden and Hoxton Park. Of the five further airport units (Alice Springs and Tennant Creek being treated as a single unit for reporting purposes) the FAC purchased from the Government in 1989, four were still making losses in 1996-97. Profits and losses were before interest charges.

network-wide real rate of return on revalued assets of around 8 per cent had been earned consistently over a number of years.[8] As a percentage of airport revenue, the cross subsidies that existed between airports were proportionately much greater for the smaller loss-making airports than for the larger airports providing the subsidies. Hence, any additional profits made by the larger airports in order to make up for low or negative returns at other airports would have been only a small part of the large airports' revenue.[9]

The Board of Airline Representatives of Australia (BARA, sub. DR54) observed that, due to network linkages, differential returns between airports under the FAC might not have necessarily represented cross subsidies. However, the PSA, in examining the FAC's policy of uniform pricing across airports, considered that the degree of complementarity of demand between airports in the network was small and, in any event, would be reflected in the demands facing individual airports. It concluded:

> The most economically efficient use of the entire network of FAC airports requires separate and independent determination of the landing charges at each airport. (PSA 1993, p. 123)

The Industry Commission (IC 1992) also recommended that individual airports should, over time, recover all costs and meet a real rate-of-return target.

The breaking up of the FAC network as part of airport privatisation means that individual airports now operate on a stand-alone basis. Hence, consideration of the likely adequacy of the inherited FAC prices as a starting point for future aeronautical investment decisions at individual airports, needs to be assessed on this basis.

There were also significant cross subsidies between airport services, although the PSA (1993) indicated that the FAC's basis for cost allocation made it difficult to determine their exact extent. However, the general direction of subsidisation was from non-aeronautical to aeronautical.

Westralia Airports Corporation (WAC, sub. 21) stated that the starting aeronautical prices at Perth Airport did not cover operating costs and hence provided no

8 In its 1996 revaluation of assets, the FAC valued land at market value for alternate use (capped at light industrial) and other assets at written down replacement cost (FAC 1996).

9 In 1996-97 the total losses of the loss-making airports represented 0.5 per cent of the revenue of the five largest FAC airports. Earning an 8 per cent return on the assets of the loss-making airports would have represented around 5.5 per cent of the revenue of the five largest airports.

contribution to capital costs or a return on capital.[10] Similarly, Capital Airport Group (sub. 32) stated that the return on aeronautical assets at Canberra Airport was negative. The ACCC (1998h) report on FAC price restructuring proposals for Sydney Airport indicated that returns on aeronautical assets were estimated to be negative in 1998-99. Alice Springs, Darwin and Townsville airports made losses on their total operations in 1997-98, their final year of operation under the FAC.

The Department of Transport and Regional Services (DoTRS) indicated that leaving these distortions in the starting prices was a conscious policy:

> It was, however, neither practicable nor feasible to attempt to unwind these distortions prior to privatisation — which was intended to accelerate the micro economic reform in the aviation industry. Hence an important feature in the sales process was a requirement that the efficiency gains potentially available at the major regular public transport airports be shared with airport users. In effect, the Commonwealth chose to forego value in the sale by requiring real price declines in aeronautical charges. The prices oversight framework, and in particular the application of a CPI-X cap, was the vehicle used to deliver these short term gains to aviation users. (sub. 39, p. 8)

The DoTRD Pricing Policy Paper (1996) indicated that these arrangements were to be reviewed after five years. (However the significant downturn in Australian and world aviation precipitated changes in October 2001.)

BARA (sub. DR54) noted that establishing the existence of genuine cross subsidies at airports is complicated by the presence of common costs and demand interdependencies between aeronautical and non-aeronautical services. With regard to common costs, aeronautical revenues would need to be below the avoidable costs of providing those services before an economic cross subsidy is established.

In the short term a significant portion of airport costs would remain even if aeronautical operations ceased. However, the above evidence concerning FAC aeronautical prices and revenues strongly suggests that aeronautical services at a number of FAC airports would not have been covering their long-run incremental costs. This is important for assessing whether existing prices are likely to justify new investment.

The impact of demand interdependencies between airport services on the assessment of cross subsidies involves similar issues to the single-till versus dual-till debate considered in chapter 10 and appendix C. It is recognised there that, because of demand interdependencies, airports will have an incentive to use part of

[10] In the last year of FAC operation (1996-97), Perth Airport made a profit of $27 million and had a return (before interest expenses) of 12 per cent on total assets. In view of this, the failure of starting prices to cover aeronautical costs suggests that Perth Airport earned significant non-aeronautical returns.

profits earned on non-aeronautical activities to contribute to returns on aeronautical services, without representing a cross subsidy. However, this incentive will not extend to a full single-till system as operated by the FAC and to this extent the FAC pricing system provided cross subsidies from non-aeronautical to aeronautical activities.

Importantly with regard to cross subsidies, the starting prices for the price caps were not adjusted by the FAC or the regulator to remove economically inefficient cross subsidies and hence are unlikely to be a good basis for efficient pricing. The PSA inquiry into the FAC's charges concluded:

> The current approach where the pricing of aeronautical services (as defined in the Act) are largely determined on a residual basis will contribute to inefficient use of existing aeronautical and non-aeronautical activities and distort signals for investment. (PSA 1993, p. 170)

Both the PSA (1993) and ACCC (1996) recognised significant inefficiencies in the FAC's aeronautical charges.

The Xs

As part of the airport sale process, the Government announced real weighted average annual aeronautical price reduction factors (the Xs) which were to apply for five years and varied between airports. The Xs were determined by the Government using advice from the ACCC. The ACCC stated:

> The ACCC's advice was based on its analyses of the airports' projected demand, costs, expected productivity improvements and economic performance. The cap is based on the prices charged by the FAC before the airports' privatisation. (ACCC 2000a, p. 10)

In addition, the ACCC (1998a) indicated that one of the factors considered was a modest level of capital expenditure based on expected investment requirements over the five years of the initial regulatory framework. It also indicated that Adelaide and Coolangatta airports were exceptions with no amounts included for new investment.

Direction No. 24[11] to the ACCC from the Minister for Financial Services and Regulation stated that the value of each airport's X reflected productivity improvements that the Government considered could be made in the provision of aeronautical services at each airport. However, a weakness in the application of the price cap has been the failure to enunciate clearly how the Xs for each airport were determined. Transparency and certainty are both attributes of good regulation that are absent in the application of the X values.

11 Direction No. 24, October 2001, replaced previous Directions (chapter 3).

Regardless of how they were calculated, airport operators were aware of the X values (and starting prices) before they bid for leases. They could make their own assessments of their ability to achieve the efficiency improvements and volume growth needed to make the resultant prices viable over the five-year period in which the price caps were to apply.

Traffic volumes are crucial in determining whether an airport achieves expected aeronautical productivity growth. The FAC (1998) observed that increases in traffic volumes had been the driving force in the Corporation's performance — passenger numbers growing by over 80 per cent between 1988-89 and 1996-97. A number of airport operators (for example, Brisbane Airport Corporation (BAC), sub. 8; Gold Coast Airport (Coolangatta), sub. 12; and Northern Territory Airports (Alice Springs), sub. 25) indicated that traffic growth up to 2000 had been lower than the historical trend while others (for example, Melbourne Airport, sub. 7) reported strong traffic growth.

All of the core-regulated airports had experienced slower growth in passenger numbers since privatisation than in the five years prior to privatisation. This was particularly so for Brisbane, Darwin, Perth and Launceston airports. The events of September 2001 led to declines in volumes for all core-regulated airports, which are now being reversed to varying degrees. The longer-term impact on traffic is likely to become clearer during 2002.

While all lessees were aware of the starting aeronautical prices and Xs, in order to estimate allowable aeronautical prices under the cap, they also had to form their own expectations of likely CPI movements.[12] Many costs of aeronautical services are likely to move independently of the factors determining the CPI. For example, it has been argued by some airports that the low increases in the underlying CPI since 1997 have been unfavourable to airport operators. WAC observed:

> We have also seen CPI work very much against us. Now, we realise that that's an external fact, but the reality is that the average rate of CPI in the lead-up to the privatisation of the airport — and we would think that was in some way taken into account in the CPI-X determination — has certainly deteriorated from our point of view quite significantly, and CPI is in fact the largest single-value driver of our business. (trans., p. 321)

WAC continued that many of its costs are fixed and not related to the CPI while some of its non-aeronautical revenue, such as property rents, were adversely affected by low CPI growth (trans., p. 321). However, consistently low underlying CPI growth appears to have been an important factor in the decline in interest rates

[12] In addition, bidders would have needed some view about likely price movements that would be allowed outside the cap for necessary new investment and other cost pass-throughs.

in recent years and hence may have indirectly provided airports with savings in the servicing of debt and equity capital.

While the implementation of the CPI-X formula has been relatively routine, the price outcome is likely to be crucial to future profitability and investment at airports. The ACCC observed:

> The current prices are a carry over from the prices charged by the FAC before privatisation. These charges were determined on a network basis. They were also determined on a single-till basis. This means that the current charges are unlikely to closely correlate to aeronautical costs. (sub. 36, p. 109)

Knowledge of the growth and productivity assumptions underlying the Xs designated for each airport would assist in assessing the extent of any distortions.

FINDING 8.1

The single-till basis of the starting prices (also incorporating some cross subsidies between airports), and the real declines in aeronautical prices at most airports under the price cap suggest that, for many airports, aeronautical prices by the end of 2000-01 may have been below the level necessary to justify future aeronautical investment.

Of course, at least for the first five years, buyers of privatised airports would have factored in their expectations of the price effects of the CPI-X cap, coupled with scope for price increases for necessary new investment (NNI). However, while the X values were known, there was a lack of transparency regarding the types of investments that were or were not included in the Xs, as well as (as discussed below) a lack of initial definition of allowable investment for cost pass-through to prices.

The possibility of obtaining increased prices to compensate for NNI (section 8.3) has created scope for ameliorating adverse effects the CPI-X cap might have on investment undertaken to expand or improve aeronautical capacity. However, incentives for replacement and maintenance investment would still remain low if the price cap has generated low aeronautical prices. Chapter 10 discusses possible approaches to resetting these parameters if a CPI-X approach were to be continued or reintroduced for any airports.

Implementation issues

Because CPI-X is a formula approach to price setting, there is limited scope for regulatory discretion once the starting prices and Xs have been established. For the life of the initial regime, these parameters were established by the Government

before the airport leases were sold. The major regulatory discretion has occurred in deciding the extent of cost pass-throughs for new investment and government-mandated security requirements (discussed in section 8.3). However, one matter open to interpretation is the reach of the basket of aeronautical services subject to the price cap. Two issues have been dominant here, the facts of which are discussed in detail in appendix E.

First, there has been dispute between the ACCC and a number of airports regarding whether charges on taxi operators collecting passengers at an airport are part of the definition of aeronautical services (landside roads) and, hence, part of the basket under the cap. Second, as part of its monitoring of aeronautical-related prices, the ACCC (1998b) recommended that fuel throughput levies, which have been introduced at two core-regulated airports, should be transferred from price monitoring to be included in the price-cap basket because it considered there was a strong case that their implementation represented an abuse of market power. To date, the Government has not responded to the ACCC recommendation and fuel throughput levies remain subject to price monitoring.

In establishing a price-regulation regime, the important issue in deciding what services should be subject to greater scrutiny is the extent of airport operators' market power in those services. The ACCC contended that airports have taken advantage of market power by introducing taxi charges and fuel throughput levies.[13] The International Air Transport Association (IATA, sub. 43) argued that any fees on fuel suppliers should only cover the costs associated with the provision of fuel facilities.

Whatever the degree of market power in refuelling (chapter 6), airports appear to be able to extract charges greater than the costs of these services. Whether the implemented charges represent an abuse of market power cannot really be assessed fully without considering the constraint placed on aeronautical returns by the price cap.

For core-regulated airports the issue is complicated by possible commitments given to bidders for airport leases regarding the treatment of these charges. Regardless of this, the ACCC (1998b) observed that directions under the PS Act required it to monitor fuel throughput levies and the Act required it to pay particular regard to the need to discourage firms from abusing market power. It also indicated (sub. 36) that it had received legal advice that taxi charges would be covered by the definition of aeronautical services used for the price cap. The Full Federal Court has confirmed

[13] Melbourne Airport has sought a taxi levy through the NNI provisions, based on the costs of building improved services for taxi operators. The ACCC did not object to a charge of $0.66 per taxi, compared to the $1.40 originally proposed by Melbourne Airport (appendix E).

this interpretation in a case involving Canberra Airport, at least for the particular facts of that case (appendix E).

Such alleged contradictions between the sale process and the regulatory framework increase the risk premium bidders will place on future sales, thereby decreasing returns to taxpayers and adding to the costs of implementing regulation. In undertaking sales of their assets, governments need to balance the objectives of high sale value and the efficient subsequent regulation of the activity concerned.

The taxi issue arose because of a lack of detail in the guidelines and legislative instruments regarding the extent of services covered by the term 'landside roads'. Capital Airport Group (sub. 32) and WAC (sub. 21), amongst others, claimed that airport bidders were promised that ground transport charges could be introduced outside the cap. The ACCC argued that:

> The Commission's concern is that the matter of taxis could easily have been addressed in the regulatory instruments. The failure to explicitly address the issue has resulted in unnecessary uncertainty for airport operators and airport users. It has also resulted in substantial costs to the various parties because of the litigation process. (sub. 36, p. 112)

These problems also highlight the difficulties of imposing an industry-specific regulatory framework via the PS Act, which contains its own set of broad regulatory objectives and criteria, and which may not reflect adequately the Government's desired regulatory framework for a particular industry.

Notification of proposed price increases for aeronautical services

For companies declared under the PS Act, the requirement to notify proposed price increases is the usual mechanism through which the ACCC examines the firm's prices. However, for the privatised core-regulated airports, the main regulatory constraint on prices for aeronautical services has been the price cap. While airports are required to notify proposed increases in prices of such services, the ACCC is not expected to object to notified price increases that do not result in an airport breaching its price cap. DoTRD observed:

> The ACCC will not object to price changes to aeronautical charges unless they breach the price cap. This leaves scope for airport operators to continue to rebalance charges within the overall price cap on aeronautical charges set for the airport. (DoTRD 1996, p. 4)

Hence there is limited scope for the notification process to affect pricing other than applications made under the NNI test and other cost pass-through provisions. The

ACCC (sub. 36) has observed that the mandatory nature of the CPI-X Direction (No. 20) sat uneasily with its prices notification responsibilities under the PS Act.

In addition, low CPI increases in recent years have meant that the CPI-X formula has, for most airports, generated average nominal price declines for notified services. Hence notifications of proposed price increases have been unnecessary for most airports unless restructuring of prices within the cap was undertaken. Some airports have exceeded the cap in individual years, but because this has not involved price increases, the notification process has not been invoked. Canberra and Townsville airports, each with X values of 1 per cent, have both been permitted increases in average aeronautical prices under the price cap — 0.5 per cent in 1998-99, 0.7 per cent in 1999-00 and 1.8 per cent in 2000-01, while the cap permitted increases of 0.3 per cent at Launceston Airport (X of 2.5 per cent) in 2000-01.

8.3 The price cap: allowable price increases above the cap

Depending on the adequacy of starting prices and the method of determining the Xs, use of a CPI-X formula could be aimed at generating appropriate aeronautical prices without, for example, any need for further adjustments for investment (chapter 10). However, the post-privatisation regulatory framework allowed the ACCC to sanction aeronautical price increases above the price cap in certain situations where the cap may inhibit expenditure necessary for efficient provision of aeronautical services. Since October 2001, these provisions are only relevant to the three Phase 1 airports still subject to the price cap and Sydney Airport which is still subject to price notification.

Necessary new investment

The most significant exception to the price cap related to recouping costs of NNI in aeronautical assets.[14] For the 11 privatised core-regulated airports, the NNI provisions were formalised in directions under the PS Act (chapter 3) and implemented by the ACCC using the PS Act legislative criteria for performing prices oversight (section 17(3)) and the criteria in Direction No. 20 (chapter 3, box 3.2).

[14] The removal of the price cap for the eight Phase 2 core-regulated airports means that NNI provisions now only apply to the three Phase 1 airports plus Sydney Airport.

The NNI provisions were one of a number of instruments designed to encourage appropriate aeronautical investment by airport operators. These include clauses in airport sale agreements and leases specifying minimum levels of investment over each of the first two five-year periods following privatisation, and requirements for ongoing maintenance of airport structures and maintenance, to at least current standards, of those parts of the airport needed for aircraft access (chapter 3). Also, the lessee must provide for the use of the airport site as an airport. In addition, the quality monitoring provisions of the Airports Act should assist in encouraging investment in facilities to maintain quality of service, although airports are likely to have sufficient market incentives to maintain quality (chapter 9).

Since privatisation there have been 18 proposals for NNI cost pass-throughs involving total expenditure of over $200 million. The major expansion of airport infrastructure that occurred under the FAC has reduced somewhat the immediate need for new aeronautical investment at a number of airports.[15] The key issues in assessing NNI are whether it is an efficient and effective means for obtaining the prices needed to generate efficient levels of aeronautical investment, for facilitating access to airports for new airlines, and for fostering the commercial relationships that will engender dynamic efficiency in airports and their users.

Incentives provided by NNI

The NNI process establishes incentives for airport operators and users that are important in determining whether efficient levels of new aeronautical investment are achieved.

Incentives for airports

In return for undertaking new investment, current NNI provisions offer airports aeronautical price increases either agreed to by users or determined by the ACCC. The ACCC still has the power to object to price increases negotiated between the parties.

The NNI provisions appear predicated on the following:

- the prices allowed under the price cap may not be adequate to deliver an adequate return on new investment; and

15 From 1988-89 to 1996-97, the FAC invested $1.6 billion in airport infrastructure (including non-aeronautical facilities).

- given scope for cost pass-through under NNI provisions (essentially rate-of-return regulation for NNI), there need to be appropriate checks on airport investment proposals, including majority user support for such proposals.

On the first point, as discussed above, evidence suggests that the CPI-X framework, applied to FAC starting prices, has resulted in aeronautical prices that may not, of themselves, justify new aeronautical investment. Therefore the NNI test is important in allowing efficient new investment to achieve appropriate returns. Airport operators bid for the leases on the basis of the CPI-X and NNI procedures operating for at least the first five years of the lease.

However, even for investments that replace or expand capacity (and hence maintain or increase revenue), if aeronautical prices are too low, an airport is not likely to proceed with them. Melbourne Airport observed:

> The necessary new investment arrangements exist, in our view, solely because without them airports would not invest because airports require a price increase across the cost base as a whole to justify investment, because at the current prices you would not invest at all. So the necessary new investment arrangements, in our view, have to be seen very clearly as a fix for the problem of prices being below what you might call efficient investment prices. (trans., p. 167)

The potential for the airport to earn non-aeronautical revenues from capacity-expanding or quality-enhancing investments may ameliorate such a problem somewhat. In addition, some new investments may be undertaken based on the cost savings they deliver to the airport operator, rather than the revenue they generate. The ACCC does not allow price increases for cost-saving investments (ACCC 2000b).

On the second point, it is not clear that airports have an incentive, either with or without the current price regulation, to undertake extravagant investment — so-called gold plating. Only if they consider that regulators will grant prices that will provide above normal returns on assets — prices that they believe can be realised in the market — are airports likely to over-invest. Capital market pressures on privatised airports — many of which are dominated by sophisticated shareholders such as fund managers and large corporations — should discourage unproductive expenditure (chapter 7).

However, NNI provisions could encourage inefficient substitution of new capital for other inputs, given the scope to receive price increases for new investment. WAC considered that the ACCC's interpretation of the term 'investment' was too restrictive:

> … the narrow definition suggested provides an incentive to airport lessee companies to select more costly solutions that unquestionably qualify as capital rather than what may

well be more economic short-term investment solutions that are denied because of the definition. (sub. 21, p. 18)

The ACCC (2000a) indicated that it considered each NNI proposal on its merits and could allow pass-through into higher prices of incremental operating and maintenance expenditure flowing from new investment. Appropriately applied, this approach could avoid biasing expenditure choices between alternative methods of undertaking a proposal which qualified as new investment. However, it would not deal with distortions to the choice between an option that would not qualify as new investment and an alternative approach that would.

Airport operators also may have an incentive to try to convince regulators to allow them inefficiently high prices for new investment. While for firms in competitive markets charging inefficiently high prices would result in lower profits, a firm with market power could increase profits if allowed to follow such a strategy.[16] Of course, there is an incentive to submit ambit claims if the regulatory arbitration process involves determinations that fall somewhere between the competing claims of airports and users.

Incentives for airlines

If the airline market were competitive (that is, if airlines had negligible market power), and if they were targeting similar parts of the market, the interests of airlines should lead to their agreement to required investment at efficient prices at the appropriate time. Delays in approving efficient NNI prices would not be in the airlines' interests. Hence, the requirement in the pricing guidelines that users with a significant interest support the new investment and associated charges would seem a potentially useful criterion for assessing new investment proposals. BARA argued:

> The interests of BARA members are promoted by encouraging airports to invest when it is efficient to do so. No one stands to lose more than the airlines if necessary new investment is not delivered in a timely manner. It would make no sense for airlines to support a regulatory system that ultimately failed to deliver an adequate stream of investment in airport services. (sub. 41, p. 38)

However, there are several reasons why airlines, particularly incumbent airlines, might have incentives that conflict with efficient provision and pricing of new investment. If an investment in increasing aeronautical capacity provides benefits to new entrants, existing airlines will have an incentive to delay that investment. Even if the existing airlines expect to receive net benefits in a direct sense from such an

16 As noted in chapter 7 there are various other incentives (such as the potential to earn non-aeronautical revenue) and constraints which will lessen the extent to which airports seek to maximise aeronautical profits.

investment, the total impact on them may be negative because of the facilitation of increased competition. The significant reductions in airfares that have occurred on routes with new entrants indicate the size of these potential costs for incumbent operators.

The Australian Airports Association (AAA) argued:

> Airlines have been utilising the procedural aspects of the 'necessary new investment' (NNI) provisions as their primary means by which to undertake regulatory gaming, and thereby stifle new aeronautical investment activity at airports and consequently stifle the opportunities available to the new entrant airlines. (sub. 15, p. 4)

BAC observed that its problems were limited to certain projects:

> In some instances those projects are projects that provide benefits to new entrant airlines either greater than the incumbent airlines or to an equal extent. So they're using those mechanisms, or the NNI mechanism, to stall those projects that could provide some benefits to their competitors. (trans., p. 208)

Qantas Airways (sub. 48, p. 21) stated that airport operators' claims that it had been involved in gaming were 'entirely without merit'. It argued that access to terminal facilities was the only airport barrier to the entry of new airlines and observed that Qantas had not participated in regulatory decisions regarding investment and pricing for new domestic terminals. Impulse's view (sub. 18), discussed below, was that incumbent airlines had frustrated some airport investment in order to inhibit new entry.

The ACCC (sub. 36, appendix D) pointed out that the shared nature of airport terminals has encouraged strategic behaviour by potential tenants trying to minimise their share of the terminal costs. Such behaviour has been observed in negotiations regarding the new terminals at Melbourne and Adelaide airports. It is difficult for a regulator (or an airport) to disentangle the genuine from the strategic aspects of such claims. Different airlines do have different requirements for terminal and other facilities, but they are likely to exaggerate these when negotiating airport charges — even in the absence of a regulator.

The ACCC also noted that there can be incentives for higher-cost operators to try to raise the costs of low-cost competitors, even if this means increasing their own costs.[17] Virgin Blue observed:

> The Adelaide terminal is one which is considerably out of whack with the operating strategy of Virgin Blue and is significantly higher cost, and that is a very real concern,

[17] The higher-cost operator may not be less efficient but may simply offer a higher level of service as part of its business strategy.

> where a major incumbent airline actually might have the capacity to impose a significant increase in the operating costs of a new entrant airline. (trans., p. 354)

In addition, the incumbent airlines have had a long history of dealing with an airport operator pricing on a single-till basis. Switching to an NNI regime predicated on new aeronautical facilities covering their full cost through aeronautical price increases is a significant shift in approach which might be expected to encounter some resistance.

Melbourne Airport argued:

> The current arrangements fail to provide an environment in which normal commercial arrangements, between airport operators and airlines, will emerge. Airlines see the opportunity to involve the ACCC in every matter, as the source of better short-term financial outcomes than they could achieve through commercial negotiations. They effectively seek to game the process. In a situation where they have nothing to lose (other than the asset not being provided at all) why would they do otherwise? (sub. 7, pp. 32–3)

SACL suggested that this problem was compounded by conflicting objectives of the regulator.

> Under the existing regulatory structure, airlines do not have an incentive to reach a compromise position during negotiations, as the ACCC's assessment process of price notifications may achieve a better outcome for them because of the conflict between the ACCC's consumer advocacy and efficiency considerations. (sub. DR62, p. ii)

Such behaviour may have been sensible for airlines in the case of some investments if they saw airport operators as effectively captured in their financial investment in an airport, and constrained by current lease and safety requirements to undertake certain capital expenditures, even if the investments are not financially viable at current aeronautical prices. For example, WAC (sub. 21) indicated that due to safety, security, environmental or regulatory requirements, it had undertaken capital investments that were not approved for NNI pass-through and did not provide an adequate return at current aeronautical prices.

However, airlines would also have an incentive to object to airports seeking excessive prices (which could be achievable in the market and profitable for an airport with market power) for undertaking new investment. The regulator is faced with determining which airline claims are justified from an efficiency perspective and which are based on other incentives facing the airlines.

The CAA noted the inevitability of strategic behaviour under regulation:

> The regulator also cannot avoid the fact that the regulatory system creates incentives for 'gaming' by the airports and users, in order to influence the price cap to their respective benefits. (CAA 2001c, p. xiv)

Developing NNI procedures

The DoTRD Pricing Policy Paper (1996), and the PS Act criteria (s. 17(3)) and associated Ministerial Directions, provide limited guidance for applying the NNI provisions. NNI was not defined and the extent of investment expenditure included in the X factors generally has not been forthcoming. Finalised ACCC guidelines were not published until April 2000 — nearly three years after the first leases commenced. These guidelines included the threshold matters of defining 'necessary', 'new' and 'investment' and, in applying a cost-based regulation approach, a variety of other issues, such as cost of capital and common cost allocations between aeronautical and non-aeronautical services. Hence, while initial uncertainty was to be expected in applying the new system, this has been heightened by the lack of guidelines on important parameters.

This may not have been a problem if the intention underlying the DoTRD Pricing Policy Paper (1996) — that commercial relationships between airports and their immediate customers would generate negotiated outcomes — had been achieved. However, in general, successful negotiations on major issues have not been the rule and regulatory intervention has been continually required.

The ACCC (2000b) indicated that user support would be an important determinant in its assessment of whether a particular project should be classed as new investment. If such support were not forthcoming, the ACCC defined new investment as a change in fixed durable inputs that does not simply seek to replace natural degradation of capital. WAC (sub. 21) claimed that airport buyers when bidding for leases assumed that NNI provisions included replacement investment. However, ACCC (2000b) cited DoTRS in (April 1999) correspondence to the industry as expecting essential and on-going investment to be funded from ongoing revenue streams.

As well as considering the meaning of the term NNI, decisions on whether particular investment should be covered by NNI procedures are also linked to what was included when calculating the Xs in each airport's CPI-X formula. If the starting prices and/or the calculation of the X factors included an allowance for certain types of investment, then there is a clear case for their exclusion from NNI. Airport operators purchased leases with full knowledge of the aeronautical starting prices and the X factors. However, the appropriate expectation for NNI issues is not so transparent. In contesting NNI applications, airlines have argued that certain capital expenditure was included in the Xs and hence should not attract NNI cost pass-through. However, as discussed above, what was contained and what was omitted from the Xs has never been specified exactly and airport operators appear to be particularly uncertain in this regard.

Northern Territory Airports stated:

> Clearly the Government has been remiss in not divulging how the 'X' factors were derived and thus has created an expectations gap between airlines, operators and indeed the regulator. (sub. 25, p. 15)

The AAA argued:

> The ACCC has incorrectly interpreted the scope of NNI provisions to exclude replacement capital expenditure. The impact of this incorrect definition of NNI by the ACCC has been the rejection and deferral of investment in replacement aeronautical infrastructure as airport owners are unable to justify capital expenditure on assets that do not allow for the recovery of full costs and a return on their capital. (sub. 15, p. 4)

On the other hand, Qantas (sub. 48) considered that current prices already contained a component for depreciation of existing assets that would allow for re-investment. However, while existing aeronautical prices may provide some return on replacement investment, the important issue for generating efficient levels of investment is the sufficiency of that expected return in the future.[18]

It is not clear whether any current disincentives to investment (for example, as evidenced by delays in the resurfacing of a runway at Perth Airport) reflect the interpretation of NNI by the ACCC, or rather indicate that starting aeronautical charges were insufficient to justify replacement investment on a dual-till basis.

The application of NNI procedures also has suffered from a lack of clarity in the original pricing guidelines and subsequent legislative instruments. The pricing guidelines have no legislative effect and, in applying the NNI regime, the ACCC has had to operate under the PS Act and related Directions. These Directions do not refer to certain of the objectives and policy intentions of the prices-oversight regime, such as encouraging commercial negotiations. However, the ACCC (sub. 36) expressed concern regarding the deterministic nature of existing Ministerial Directions for airports and considered that this sat uneasily with the discretion given to the ACCC under the PS Act.

In arguing for greater use of cost–benefit analysis in evaluating NNI proposals, Professor Forsyth observed:

> At present, the ACCC works to a list of general criteria, which in themselves are reasonable enough, but which do not lead to a systematic evaluation of investments. (sub. 5, p. 26)

[18] Because it followed a network-wide single-till approach, the FAC undertook significant new and replacement aeronautical investment even though aeronautical prices may not have provided the revenue needed to justify them. Profits from non-aeronautical activities made up the shortfall and enabled the FAC to achieve the accounting rate-of-return objectives imposed by the Commonwealth Government.

The problems in using the PS Act also are highlighted by the Commission in its review of the PS Act (PC 2001c). It observes that the PS Act has many deficiencies as a means for prices oversight and argues that there is little justification for it as a generic price-oversight mechanism. Thus, in the few cases where any price control might be deemed necessary, it argued that this would be best implemented via industry-specific legislation.

Participants' views

Participants' views differ significantly regarding the operation of the NNI provisions. In general, incumbent airlines have been happy with the process, new airlines have varied in their opinions and the airport operators generally have expressed dissatisfaction. The views of those involved in framing and implementing the regulations also differ.

Airlines' views

The DoTRD Pricing Policy Paper (1996) placed emphasis on user support for new investment and charges. Among airlines, incumbents and new entrants had conflicting judgements. BARA stated:

> In BARA's view the current regulation of the privatised airports in Australia has acted to constrain, to some extent, the market power of the airports while encouraging efficient investment in airport expansion. (sub. 26, p. 1)

Ansett considered that the regulatory regime provided some incentive for airlines to oppose excessive prices that otherwise would be lacking.

> In the case of the regulated Australian airports, the current economic regulatory regime provides the Ansett/Air New Zealand Group with an incentive to scrutinise the costs and prices of airports. This is because the regime allows the airlines to have sufficient influence over these costs to justify the resources required to scrutinise them … (sub. 42, p. 38)

Qantas (sub. 48) considered that there was some room for improvement in the administrative approach to assessing NNI applications, but that airports' complaints of the process retarding investment, or of airlines 'gaming' the system, were invalid.

Impulse Airlines, then a new entrant into domestic trunk routes, was critical:

> Impulse's introduction in the Canberra marketplace also affords an interesting example of lack of support for infrastructure development. Canberra International Airport had tried for 2 ½ years before the arrival of Impulse to gain support from both Qantas and Ansett to re-develop apron space which had been in its current state for 28 years. It was not until the introduction of Impulse that CIA felt able to take their case to the ACCC.

> Whilst arguments over rates of return were at stake, this is not the key issue. The key issue is that an airline competitor was able to stymie infrastructure development for 2 ½ years in order to harm a competitor and ultimately the airport. (sub. 18, pp. 2–3)

Impulse (sub. 18) also felt that the price cap had meant that infrastructure quality had to be compromised at the new Melbourne and Sydney express terminals.

Virgin Blue (sub. 30) (a new low-fare carrier) contended that NNI pass-throughs outside the price cap should be allowed only for investments that would not be undertaken without the pass-through. It considered that incremental non-aeronautical revenues should be considered when examining NNI proposals such as Melbourne Airport's domestic express terminal.

Such differing views of two new airlines regarding pricing of the same investment, indicate the difficulty for the regulator in identifying facts, the targeting of different market segments, and gaming behaviour. Impulse and Virgin Blue had different business strategies which may have led to their divergent attitudes to the Melbourne express terminal, but they may also have attempted to use the regulatory framework to their advantage. Similar issues arose regarding Virgin Blue's use of the proposed Adelaide multi-user terminal.

Impact of NNI provisions on investment and commercial relationships

DoTRS, which coordinated development of the regulatory framework, considered that the application of NNI provisions had not worked as expected and had hindered new investment and the development of commercial relations.

> At present the level of regulatory intervention is excessive and may in fact be counterproductive in that it is providing an incentive for regulatory gaming by stakeholders for commercial advantage rather than allowing market forces to operate and encourage commercial negotiation. There is also considerable evidence growing that the regime is creating disincentives to invest in aeronautical infrastructure and economic efficiency is being adversely affected. (sub. 39, p.19)

It noted the strategic behaviour of airlines in negotiations for the proposed multi-user terminal at Adelaide and regulatory intervention in the agreement between Impulse Airlines and Melbourne Airport for use of the domestic express terminal.

However, the ACCC argued that its involvement had not deterred investment:

> The investments undertaken by airport operators to date suggest that the Commission's [ACCC] pricing decisions have not deterred investment in airports. In particular the experience suggests that the Commission [ACCC] has adequately allowed for the risks facing airport operators. (sub. 36, p. 29)

That new investment has taken place, particularly in the early stages of the new untried regime, does not constitute proof that the regulatory arrangements have not had important disincentive effects. Inevitably, airports initially will attempt to make use of the new regime. It is their response to this experience that will determine longer-term implications.

In varying degrees, all airport operators have been critical of the NNI regime, in particular the way in which it has been implemented. Northern Territory Airports submitted:

> We find the ACCC's comments about its own supervision of new investment at Australia's airports at odds with the reality we have had to go through. (sub. 50, p. 17)

It indicated (sub. 50) that because of the cost, delays and uncertainty of the application of the NNI process, it had deferred a number of investment projects indefinitely. These included projects approved for price increases by the ACCC but for which costs (and hence the necessary price increase) had risen during the extended regulatory process. Because of significant reductions in traffic, these investments have still not proceeded despite the October 2001 regulatory changes (which removed the price cap from Darwin Airport).

Melbourne Airport argued:

> The necessary new investment arrangements are a makeshift attempt to address the critical issue of under-investment. The limitations of this approach are apparent however. Poor administration and the scope for gaming by airlines raise risks and so costs for airports. Any resulting under-investment is likely to be felt most keenly by new entrants into the airline business. (sub. 7, p. ii)

Following Melbourne Airport's exposure to the NNI process when developing a new common-user terminal, it indicated (trans., p. 156) that, in future, it would delay new investment until regulatory approval of proposed related price increases had been received.

BAC (trans., p. 206) indicated that it was following a similar approach, while Gold Coast Airport stated:

> There is no certainty that commercial terms agreed with users will be endorsed by the ACCC …
>
> Because of this uncertainty GCAL [Gold Coast Airport Limited] has deferred initiating any necessary new investment until the process becomes more clearly defined. This decision will mean additional maintenance costs are incurred in the short to medium term as current pavements are showing signs of stress due to increasing use of heavier aircraft by both Qantas and Ansett. (sub. 16, p. 12)

However, BARA stated that its members found no evidence or rationale for an investment slow-down by airports and cautioned against taking airports' complaints at face value:

> … airports might argue that the current arrangements constrain investment as a path to convincing the Commission that complete deregulation is a better alternative. (sub. 41, p. 39)

Ansett (sub. 42) stated that despite some initial problems, the relationships between airlines and airports under the current regulatory arrangements were improving and are better than those in New Zealand under a less intrusive regime.

The Motor Trades Association of Australia Superannuation Fund identified a more fundamental problem for investment under regulatory oversight:

> Even the best intentioned and informed regulator will make mistakes and proper assessment of investment proposals take time. Requiring ACCC approval of proposed price increases or new charges then necessarily creates risk, uncertainty and delay, all of which increase the costs of investment subject to assessment (and the required rate of return). These alone would create a disincentive to new aeronautical services investment. (sub. 22, p. 54)

Australian Airports (Townsville) (sub. 14) indicated that even if investment eventually takes place, the NNI process was slow and cumbersome and airlines have proven difficult to deal with. It also considered that price increases needed to justify new investment had been quickly negotiated with airlines and the local community at its non-core-regulated Mount Isa Airport (sub. 14).

Encouraging commercial negotiation in establishing prices for airport services was a key objective of the current price-regulation framework. While there is little scope for negotiation in applying the CPI-X formula, the NNI test held a clear expectation that negotiations between airports and their users would often generate acceptable outcomes for the regulator to approve. The AAA felt that this had not occurred:

> It was a clear plank of the Government's policy objectives to encourage the development of mature commercial relationships between airlines and airports. I think it's clear that that hasn't happened. To some extent it's understandable it hasn't happened because the commercial reasons for failing to reach agreement are just so strong. (trans., p. 142)

Professor Forsyth (sub. 5) argued that negotiated agreements where users are willing to pay the costs of investments are preferable to regulatory intervention. Negotiated agreements use the greater knowledge of the participants rather than the often imperfect information available to the regulator. However, evidence suggests that, in the current regulatory framework, the relatively easy recourse to the ACCC

combined with the incentives facing airlines appears to have forestalled the negotiation process.

The Commission's review of the National Access Regime (PC 2001a) analyses the potential disincentives that regulation can have on investment in infrastructure. In particular, it observes that additional risk is created by the uncertainty about regulatory decisions and future changes in the regulatory framework, both of which can have significant impacts on the profitability of long-lived investment.

Compliance costs

There has also been concern, particularly among smaller airports, regarding the cost to airport operators of the NNI process. Airport operators have also complained of the expense of even minor projects needing to go through the full NNI process.

Because of concern about setting national precedents, domestic airlines may oppose even small NNI increases at small airports. Possible international precedents might give incentives for international airlines (through BARA) to take a similar approach. Melbourne Airport submitted:

> It must also be added that airlines (we suspect at the urging of IATA) often see any regulatory decision as having the potential to be a global precedent, and therefore often argue points that they privately concede, have no merit. (sub. 7, p. 33)

The requirement for even small investments to be subject to full NNI reviews if cost pass-throughs are sought, appears to have added to the regulatory costs and detracted from the quality of outcomes of the regime. WAC (sub. 21) argued that all projects were considered equally under the regulatory guidelines regardless of size. Capital Airport Group (sub. 32) indicated that in its experience even small NNI projects had been subject to excessively detailed scrutiny.

The potential benefit of the NNI process of preventing inappropriate price increases while encouraging appropriate new investments to be undertaken, needs to be balanced against the direct and other costs of the regulation process. In the case of small investments, potential benefits are very small while the direct regulatory costs may be relatively high. This is particularly so for smaller airports that are less likely to be able to group a range of small projects to reduce the size of direct regulatory costs relative to the investment concerned.

Melbourne Airport (sub. 7) stated that a conservative estimate of the combined cost of Melbourne and Launceston airports complying with the price-regulation regime (including quality monitoring) was $500 000 per annum.

From an airline perspective, Ansett (sub. 42) submitted that, with the exception of Sydney Airport, the bulk of its costs under the current regulatory framework were similar to what they would expect to incur in dealings with suppliers in a commercial environment.

Evaluation of NNI provisions

For aeronautical services as a whole, the NNI regime has moved prices somewhat above the single-till approach to pricing used by the FAC. The broad thrust of the X factors in the CPI-X formula would appear to have been to generate aeronautical prices that essentially maintained the extent of single-till cross subsidies between services contained in the FAC prices existing at the start of privatisation. Increases in non-aeronautical profits gained since then were not factored into the Xs. Price increases obtained under NNI would have further ameliorated this situation, but only for the expansion in the capital base involved.

To the extent that the single-till starting prices of the current regime did not allow for a sufficient return on replacement investment, the exclusion of replacement investment from the interpretation of new investment means that the current NNI process could never generate aeronautical prices that covered full aeronautical costs. If lessees bid on the basis that NNI provisions excluded replacement investment, the bid prices should have reflected this and, at least for the five years of the initial regulatory framework, necessary replacement investment should have been undertaken at existing aeronautical prices. However, in the absence of clear and transparent statements of what was included in the Xs and the lack of initial detailed guidelines on the application of the NNI process, it is difficult to determine what should be expected of airport lessees in regard to undertaking replacement investment.

As the key interface between airports, airlines and the regulator, the NNI provisions have not generated the commercial relationships and light-handed regulation envisaged by the DoTRD Pricing Policy Paper (1996). No doubt some of these problems reflect teething difficulties of a new regulatory system. Definitions and procedural guidelines needed to be developed and experience had to be obtained in working with the new system. The parties needed to adjust to the new environment — the airports from the FAC network framework and the airlines (operating in a rapidly changing airline industry) to dealing with fellow private companies rather than a government enterprise.

Nonetheless, the incentives provided by the regulatory framework suggest some endemic problems that, if not addressed, will not dissipate with time and experience. The easy low-cost access to a regulator reduces the incentives for users

to negotiate with airports, while low aeronautical charges mean that airports view all new investment as a means of obtaining price increases.

Because of the short period in which it has been in operation, whether the NNI process has stimulated efficient levels of new investment is not clear. Complaints from most airlines have concerned the aeronautical prices sought to cover new investment rather than a failure by airports to invest. The observed level of new investment may still have been forthcoming if base aeronautical prices initially were set high enough to justify new investment rather than relying on pass-through provisions to increase prices selectively in return for approved new investment. Market incentives for airport operators not to restrict output and investment artificially are discussed in chapter 7. Certainly the NNI approach has generated significant regulatory intervention with its associated costs and increased regulatory risk. Given the apparently inefficiently low starting prices, a major area of concern for investment expenditure is the combined impact of the CPI-X and NNI provisions on returns for replacement investment.

The combination of the price cap and NNI rules would seem to have avoided any exploitation of market power that airport operators might have attempted in the absence of such regulations. However, in the short period in which the regulation has been operating, the NNI process appears to have created significant regulatory hurdles for aeronautical investments.

FINDING 8.2

The necessary new investment provisions have not promoted the commercially-negotiated outcomes that were envisaged by the architects of the regime. This has been partly due to the need to develop criteria and procedures for necessary new investment after purchase and for participants to adapt to the very different business environment following airport privatisation.

However, the observed difficulties also point to some fundamental problems. In particular:

- *the lack of transparency regarding what investment was considered to be included in the base aeronautical prices and what was to be covered by necessary new investment, with resultant effects on incentives to invest;*
- *the incentives for some participants to approach the regulator rather than achieve commercially-negotiated solutions;*
- *the high costs of complying with the regime; and*
- *the regulatory risk due to the uncertainty and delays introduced by the need to have every investment-related price increase vetted by the regulator.*

Other cost pass-throughs

As part of the price-cap arrangements, the ACCC is required to allow aeronautical prices above the cap to cover the direct costs (not including rate of return or overhead costs) of government-mandated security requirements. The various Ministerial Directions which have allowed the pass-through have not defined direct cost. The ACCC has interpreted direct cost to mean costs that would have been avoided if the security requirements had not been imposed, and to include depreciation and rate of return on capital. The ACCC has received over 30 security cost pass-through proposals.

In December 1998, DoTRS made changes to security regulations that placed the responsibility for international passenger and baggage screening at international terminals on airport operators. WAC claimed that the ACCC's initial decision on allowable rates of return on the capital investment required had created inefficient results:

> The ACCC initially refused to allow airports to earn a return on capital invested to purchase security equipment of greater than the cost of debt. This created a dis-incentive for airport operators to invest in the required capital equipment, thus allowing the security contractors to supply and charge for the equipment at rates which, presumably did allow for an equity return. (sub. 21, p. 25)

WAC indicated that the ACCC later allowed somewhat higher rates of return. However, by then a number of airports had committed to external security contractors to provide the equipment as the return on contractor's capital embedded in their charges was fully recoverable in higher aeronautical prices.

The price-cap regulations also allow congestion charges employed as part of an airport demand management scheme under the Airports Act, to be passed through the cap. There have been no such charges imposed at the privatised core-regulated airports. In recent years, government attitudes with regard to the more congested Sydney Airport have not favoured peak charges, due largely to concerns about their impact on fares for regional commuters. Issues of congestion pricing and price cap regulation are discussed further in chapter 10.

8.4 Recent changes to price regulation

As outlined in chapter 3, in response to the significant decline in traffic volumes flowing from the suspension of Ansett's operations and international events, the Government announced substantial changes in price regulation of the privatised core-regulated airports. For the Phase 1 airports, the regime has been altered nine months before existing arrangements were due to finish and, for Phase 2 airports, 21

months before. The Government has indicated that further consideration would be given to these prices-oversight arrangements in the light of developments in airport prices and the Commission's final report (Hockey 2001).

The Government directed the ACCC to allow the three Phase 1 airports still remaining under the current price cap (due to expire in June 2002) increases in aeronautical charges above the levels currently allowed by the cap. These increases — treated as one-off pass-throughs under the cap — were 6.7 per cent for Brisbane Airport, 6.2 per cent for Melbourne Airport and 7.2 per cent for Perth Airport.[19] Price monitoring remains for aeronautical-related services at these airports.

For all of the Phase 2 airports, the price cap on aeronautical services previously scheduled to operate until June 2003 has been removed. For three of these, Adelaide, Canberra and Darwin, the cap has been replaced by price monitoring of aeronautical services by the ACCC. This is discussed further in chapter 9.

While the effects of the new regulatory environment will take some time to work themselves out, there have been some immediate effects on prices under the price cap which are discussed below. A proper evaluation of the new arrangements will require a considerably longer period of operation.

Melbourne Airport has utilised the additional 6.2 per cent price cap pass-through allowed to it under the October regulatory changes to rebalance charges between domestic and international services. Landing charges will increase by around 11 per cent from the start of 2002. However, for international services, the terminal charge has been reduced by an equivalent amount meaning there will be no net increase in aeronautical charges for international flights. The difficult international aviation climate and the opportunity to increase Melbourne's and Australia's share of the international aviation market were cited (Barlow 2001) as the rationale for this price discrimination.

Perth Airport also increased aeronautical charges by the full 7.2 per cent of base period prices allowed by Direction No. 24. Like Melbourne Airport it made no increase in the charges for international services but increased landing fees for domestic regular public transport services by around 19 per cent from November 2001.

19 The ACCC has interpreted the percentage price increases allowed by Direction No. 24 to refer to the prices applying when the airports were privatised in July 1997 and has deemed that the resultant dollar amount increases include GST. As a result the price increases expressed as a percentage of current prices have been less than the percentages in Direction No. 24.

WAC indicated that the adjustment to charges allowed by Direction No. 24 made up only a small portion of the revenue lost due to recent declines in aeronautical traffic:

> It merely reflects the fact that there has been an extraordinary drop in airport volumes, and provides a small pricing adjustment as a partial compensation for that. (trans., p. 574)

Brisbane Airport instituted a uniform rise in aeronautical charges from November 2001 to achieve its allowable increase.

Melbourne Airport was critical of the manner in which the new regulatory arrangements were introduced:

> In our view in particular the Treasury should make clear the reasons and the methodology used to arrive at this situation, because otherwise we're just going to end up with another situation which is exactly analogous to that debate around what's in the value of X … Indeed, all that's happened really is that regulatory uncertainty has been increased … (trans., p. 403)

The basis for the one-off price increases above the cap has not been revealed and this presents similar concerns to those raised above for the determination of the Xs in the price-cap formula. This may increase unnecessarily regulatory uncertainty for both airports and their users. Also, establishing good commercial relations between the parties may be made more difficult if there is lack of transparency in important elements of the regulatory framework.

8.5 Price regulation of Sydney Airport services

Sydney Airport is the only core-regulated airport that has not been privatised. Instead, the Commonwealth Government chose to transfer responsibility for its management and operation under a long-term lease to Sydney Airports Corporation Limited (SACL), a new government-owned public corporation, in July 1998. The Government is currently in the process of privatising operation of the airport by selling all of the outstanding shares in SACL. Following the suspension of Ansett services and developments in international aviation and finance markets, the sale process has been deferred until early 2002. Unlike the privatised core-regulated airports, the price regulation framework at Sydney Airport was not changed by the Government's October 2001 announcement.

Regulatory and operating environment

Since it took over the operation of Sydney Airport, SACL has been subject to prices notification for aeronautical services and monitoring for aeronautical-related services under the PS Act for the same groups of services as the privatised airports (chapter 3). It has not had a price cap imposed but, like all declared companies, it must inform the ACCC of proposed price increases for notified aeronautical services. This regime is more extensive than the price regulation that applied to the FAC. Additional elements include the introduction of price monitoring for some services, the inclusion of necessary new investment as a justification for price increases and the monitoring of service quality under the Airports Act.

Sydney Airport is now operating as an individual airport facing some degree of competition from other major airports, rather than as part of an Australia-wide network of FAC airports. Because of its relatively high traffic volumes, government restrictions on airport hours and number of aircraft movements, and its relatively small land area, Sydney Airport suffers from greater pressure on its capacity than other Australian airports, particularly at peak times.

The ACCC pricing decision

As mentioned above, in January 1997 the FAC (with ACCC approval) increased aeronautical charges at Sydney and three other major airports (chapter 2). These were the last price increases before the FAC was disbanded. In the case of Sydney Airport, the FAC made a further price notification which resulted in a large restructuring of aeronautical charges from October 1998, but one that did not lead to an overall increase in revenue. Landing fees were cut by around 50 per cent but international terminal charges were increased by up to 30 per cent, leading to a net increase in aeronautical charges for international services and significantly lower charges for domestic flights. In addition, the peak-period landing surcharge of $250 (applicable to all aircraft) was abolished amid Government concerns about its impact on regional airlines.

The major objective of this restructuring was for charges to international aircraft to reflect more closely the cost of terminal facilities used by them. However, the resultant landing charge of $2.92 per tonne (MTOW) was only a little over half of those at the other core-regulated airports. Hence, while the price restructuring resulted in reasonable returns on investment in the international terminal, it also created very low returns from aeronautical revenue on other aeronautical investment.

Against this background, in December 1999, SACL presented a draft aeronautical pricing proposal, containing substantial price increases, to its customers and the ACCC for consultation purposes. The draft subsequently was modified (SACL 2000) and in October 2000 was submitted to the ACCC for assessment purposes. The new proposal remained substantially the same as the original draft and sought average price increases of around 130 per cent.[20] The ACCC carried out further extensive consultations before releasing a draft decision in February 2001 (ACCC 2001h). Following further public consultation, and the formal price notification by SACL on 28 March, a final decision was released in May (ACCC 2001i).

In response, the ACCC decision presented aeronautical charges to which it would not object. These charges generated revenue increases of 87 per cent of SACL's proposal. This involved a 14 per cent reduction in SACL's proposed increases for runway and international terminal fees, but no changes to the proposals for other less significant charges. The main factors generating lower approved price increases were a lower valuation of land, a smaller allowable rate of return on capital, lower depreciation and a reduction in allowable operating costs. Several of these issues are discussed below.

The SACL proposal was based on the ACCC's cost building-block approach to determining allowable prices. This involves establishing the efficient projected level of various cost components (for example, operating costs, depreciation and return on capital) and then determining prices which, based on projected volumes, would provide the revenue needed to cover these costs.

Hence, while for the first five years of operation aeronautical price regulation at the other core-regulated airports is being based on incremental changes (determined by the price cap and cost pass-through provisions) to FAC prices, Sydney Airport regulation has now moved to a complete rebasing of prices. In particular, its aeronautical prices are now freed from the inter-service subsidies that were part of the FAC approach to pricing. Because non-aeronautical revenue traditionally had provided significant profits at Sydney Airport, large aeronautical price increases were required to generate adequate profits on aeronautical activities on a stand-alone basis.[21]

20 SACL made further adjustments to various cost components of its proposal during the ACCC's consultation process.

21 ACCC (1998h) indicated that, in 1998-99, Sydney Airport was forecast to recover only 88.6 per cent of aeronautical costs, excluding a rate of return on capital. Higher depreciation charges on significant quality-enhancing capital investment undertaken between 1998 and 2000 also required higher prices.

In determining allowable aeronautical prices for SACL, the ACCC modelled allowable revenue over a five-year period.[22] It then generated a constant nominal price for five years which was forecast to provide SACL with a net present value of cash flows equivalent to this projected allowable revenue stream. The ACCC stated:

> The Commission [ACCC] considers that — in the event that the current regulatory arrangements remain in place — it would be appropriate for prices of aeronautical services at Sydney Airport to be subject to further review at the end of five years following the introduction of the new charges. (ACCC 2001i, p. 203)

The current regulatory framework allows for applications for NNI cost pass-throughs into prices during this period.

While the Commission does not see the need for a detailed commentary on the ACCC decision in this report, some aspects of the decision and related issues are of particular relevance to future price regulation at Sydney Airport and any other core-regulated airports for which ongoing price declarations or monitoring might be considered appropriate. These are discussed below and in appendix F (land valuation).

Single till versus dual till

In setting aeronautical charges, the FAC traditionally used a network-wide single till.[23] Its 1996 and 1998 pricing proposals for Sydney Airport moved towards an airport-specific approach but continued with the single till. While the DoTRD Pricing Policy Paper (1996) indicated that, with respect to the privatised airports, the Government was not mandating a single-till approach to setting aeronautical charges, this was in the context of a price cap essentially based on single-till starting prices which only changed gradually to allow for (dual-till) NNI increases or to accommodate CPI-X adjustments.

SACL's aeronautical price proposal, in arguing for an average 130 per cent increase in aeronautical charges, moved to a dual-till approach. Costs and revenues of non-aeronautical services (including aeronautical-related services) were not considered when justifying the proposed prices. The ACCC draft report (ACCC 2001h) largely accepted the SACL approach but did take into account returns on certain aeronautical-related services in determining aeronautical prices to which it would

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22 In undertaking this exercise the ACCC used projections of traffic volumes and productivity growth and made some allowance for increases in SACL's input prices.

23 Partly reflecting its high land values, Sydney Airport tended only to achieve rates of return on assets similar to the network average. Hence its charges were not cross subsidising other airports. The January 1997 price increases, which applied only to the five major airports, lifted Sydney's rate of return by around 1 per cent.

not object. Following a Government Direction (No. 22, April 2001) not to take any non-aeronautical services into account, the ACCC final report (ACCC 2001i) adopted the conventionally accepted dual-till approach proposed by SACL.

To the extent that locational rents create above-normal returns in non-aeronautical activities, use of a single-till approach is likely to distort investment decisions in both aeronautical and non-aeronautical services. Because any above-normal profits in non-aeronautical services would be totally applied to reduce aeronautical prices, additional aeronautical investment would receive below-normal returns.[24] Similarly, airport operators would have reduced incentives to achieve additional locational rents — rents that reflect consumers' valuation of certain non-aeronautical services being available at an airport (appendix C).

In its draft report, the ACCC argued that SACL possessed market power in the provision of certain non-aeronautical activities, such as car parking, and that above-normal returns in these activities should be subtracted from allowable revenue in calculating aeronautical prices. In response to Direction No. 22, the ACCC reversed this approach in its final decision.

The Commission has several concerns with the ACCC's draft report approach. First, it is important to establish that any above-normal returns in non-aeronautical services reflect the exercise of market power and not just locational rents (transitory or long-term) or short-term capacity shortages. If it is the latter, then confiscating the returns is likely to cause inefficient investment and operating decisions, particularly where a facility, such as Sydney Airport, is capacity-constrained.

Second, even if excess profits on non-aeronautical services reflect market power, it would be better to address the issue directly by constraining this market power rather than requiring cross subsidisation of aeronautical charges — especially when, because Sydney Airport is slot constrained, lower aeronautical charges largely will benefit airlines holding slots, not their customers. While the ACCC does not have the power to object to non-aeronautical charges, it can recommend that they become services subject to notification or monitoring. However, this option may be constrained in the future by any Government commitments to bidders for SACL regarding the regulatory framework for Sydney Airport. In this regard, it is important that the Government's intentions regarding the regulatory treatment of non-aeronautical revenues from services in which the operator may have market power be made clear before the sale process is completed.

24 Under a dual-till system, to the extent that aeronautical investment has complementary impacts on non-aeronautical profits, the airport operator would take these into account when assessing whether to undertake this investment.

The ACCC (sub. DR55) contended that its draft SACL decision was for discussion by participants and not part of its final decision and, hence, was not relevant to the current inquiry. However, in reaching its final decision based on giving special weight to the Government's policy set out in Direction No. 22, the ACCC argued:

> The Commission [ACCC] considers that this policy may differ from the approach that would be appropriate in order to give effect to the objectives set out in chapter 2 [of ACCC (2001i)]. (ACCC 2001i, p. 94)

This suggests that the ACCC still considers that inclusion of certain non-aeronautical revenue in determining aeronautical prices has merit.

The implementation of dual-till pricing at Sydney Airport means that the outcome of price regulation now differs markedly from that at the privatised airports. The dual till removes the constraints on new or replacement aeronautical investment that may occur under a pure single till or the current legacy of the FAC's single till. These issues are discussed further in chapter 10 and appendix C.

Cost of capital

Particularly for an airport with high asset values like Sydney, returns on capital are a significant component of costs. The quantum of returns to capital allowed in the building block approach is a function of asset values and the allowable rate of return. There are a number of complex and strongly debated theoretical and empirical issues to be resolved in estimating appropriate rates of return. This potentially makes for a significant range of possible rates to be applied by the regulator.

In the Sydney Airport decision, the ACCC's assessment of SACL's real weighted average cost of capital was 6.8 per cent compared to SACL's proposal of 7.75 per cent — resulting in a reduction in allowable annual revenue (on the ACCC's assessed asset base) of a little over $13 million, leading to aeronautical prices about 6 per cent lower than sought by SACL.

The range of potential uncertainty surrounding estimates of the appropriate cost of capital illustrates the potential disputes or errors in determining cost-based prices. Hence, prices set by the regulator may well be inefficient — either too high or too low. Even if these highs and lows balance out in the long run (as they might if the regulator does not bias the prices one way or the other), the added risk to the regulated firm will now require higher rates of return if efficient outcomes are to be achieved. If a regulated firm has market power it will be able to offset periods of inefficiently low regulated prices by taking advantage of the periods of high prices. However, if it does not have market power it would not be profitable for it to avail

itself of the periods of excessive prices. The potential costs of different directions of error in regulatory prices are discussed in the Commission's report on the National Access Regime (PC 2001a).

Land valuation

Although Sydney Airport is a relatively small airport (in terms of area) by Australian capital city standards, its close proximity to a highly-valued capital city centre means that the value of the airport site is also very high. Markedly different views have been put as to how airport land should be valued in setting aeronautical prices and the resulting significant differences in valuation would have an important impact on cost-based aeronautical prices (appendix F).

BARA (2000) argued that because the airport would continue to operate as an airport regardless of the return on land, its existing land should be valued at an opportunity cost of zero (although any new land acquisitions should be included at purchase price).[25] On the other hand, SACL (2000) argued that, being a non-specialised asset, the relevant valuation of aeronautical land for cost-based price setting was market value. Efficiency and distributional arguments have been presented for and against these approaches (appendix F).

Clearly, a zero land value fails to provide appropriate signals to Government regarding the potential value of relocating to an alternative airport site and does not give the airport operator (and airport users) the correct signals and incentives for making optimal use of existing airport land. If, due to inappropriate regulatory valuation of land, increased returns obtained from more efficient land use result in regulatory price reductions, there will be no incentive for airport operators to seek out such opportunities. If the potential efficiency benefits of private operation are to be realised in a cost-based regulation framework, an appropriate value and return on land is required.

The ACCC (2001i) considered SACL to be highly constrained in its land use, both in regard to sale of the airport and within airport use. It argued that this limited the relevance of alternate use land values in setting regulated prices. In addition, it identified a number of complications in determining the opportunity cost of land for setting efficient aeronautical prices (appendix F).

As a result, the ACCC adopted an approach of establishing the historical cost of the various purchases of land that went into making up Sydney Airport and then

[25] A similar view regarding the appropriate valuation of land at all airports was put by IATA (sub. DR56). It argued that land should be treated as a non-interest bearing investment with no cost being borne by aeronautical users.

indexing these costs to the present day using the CPI. In effect, the value of land purchases dating back as far as 80 years was maintained relative to an average consumer goods basket. Any new acquisitions and switches between uses of airport land will be valued at current prices at the time of purchase and then indexed by the CPI. The ACCC considered that this approach would provide appropriate signals for efficient use of the existing site and for new aeronautical investment. However, while this is an arithmetically deterministic approach, it essentially provides an 'arbitrated' solution to land values which lies somewhere between the competing claims.

The ACCC (sub. DR55) argued that the indexed historical cost approach was based on economic principles, in particular, that it provided appropriate incentives for new investment. For marginal land purchases, historical cost initially will equate to opportunity cost but, over time, that link will be lost if land prices move differentially from the CPI. Moreover, historical cost will not reflect opportunity cost for transfers of existing land between aeronautical and non-aeronautical uses nor will it represent the economic value of the current site. For the existing site, the use of indexed historical cost to value land for price regulation renders false precision to an inherently arbitrary valuation. As noted by Dr Gannon for the ACCC:

> Without a satisfactory empirical methodology for estimating opportunity cost, alternative bases of valuation (such as indexed historical cost) are obliged to be adopted by default. These are poor surrogates as they are unlikely to bear a reliable relationship to the underlying opportunity cost. (sub. DR55, attachment B, p. 1)

In the case of Sydney Airport, the paucity of data on the purchase price of the airport site makes indexed historical-cost-based estimates particularly problematic. The ACCC (2001h) claimed that an important advantage of historical cost was that it was readily identifiable. However, SACL (2001) observed that the prices paid for a significant portion of the airport site were not known. As a result, the ACCC (2001i) had to apply price data available for a portion of the site to estimate the historical cost of the remaining land.

The ACCC also was critical that the Commission did not provide a more detailed examination of implementing the opportunity cost principle. Dr Gannon argued:

> … there are also formidable methodological difficulties in *practical empirical application* of the principle to estimation of the value of the total land at a major capital city airport site. Unfortunately, these practical difficulties are not discussed in the PC Draft Report. (sub. DR55, attachment B, p. 1)

The Commission considers that, realistically, the current inquiry can examine only the broad principles of price setting and regulation rather than undertake detailed analysis of the numerous individual elements such as land valuation. If detailed

price regulation is imposed, then the latter is the role of the price regulator. While recognising the deficiencies of an historical cost approach, the ACCC has argued (sub. DR55) that it had limited time to consider the complex issue of measuring opportunity cost of Sydney Airport land. Nonetheless the SACL draft pricing proposal, containing a current cost land valuation, was originally released in December 1999.

In estimating opportunity cost of Sydney Airport land it is important to separate the land value from other external costs and benefits of moving to another site, raised by the ACCC (ACCC 2001i; sub. DR55). Regardless of perceived constraints that might be placed on the use of airport land, the *site's* opportunity cost for the community remains its value in the best alternative use. Pricing based on valuations other than this will mean that signals regarding consumers' willingness to pay for the efficient cost of using the Sydney Airport site for airport services will be obscured. If it is desired to include various external costs and benefits in setting prices at Sydney Airport, this should be done explicitly rather than by allowing these to confuse the measurement of opportunity cost of the site itself. In regard to this issue, the CAA considered that its price regulation role did not extend to broader planning issues:

> A full analysis of the demand and costs of airports would need to take into account the wider externalities created by airport activities … The CAA believes that it is important that these costs and benefits be properly taken into account in decisions to expand capacity. However, taking direct account of these externalities is not one of the CAA's statutory objectives as economic regulator of airports. This is the role of the planning system. (CAA 2001c, p. xii)

In addition, other activities in the economy are typically priced and operated on the basis of obtaining returns on the opportunity cost of the land they use. If pricing of aeronautical services fails to take account of such returns, then demand for those services (and demand for other inputs used to produce them) will be inefficiently raised relative to other activities.

For an airport with significant excess demand, the lower production-cost-based aeronautical prices resulting from using historical cost land values rather than opportunity cost would give particularly inappropriate price signals. Before the suspension of Ansett operations it is possible that the aeronautical prices that would efficiently allocate available capacity at Sydney Airport at certain times of the day would have already significantly exceeded production cost charges based on any feasible land valuation method.

Valuation of Sydney Airport land also raises distributional issues. As the airport is owned by the Commonwealth Government, if land is under-valued and this is reflected in pricing, there will be a redistribution (particularly of peak-period rents)

from the taxpaying community at large to airline owners or airline passengers.[26] As noted by SACL:

> In the case of Sydney Airport, which remains Commonwealth-owned, the capture of any rents by the airport is likely to have social equity benefits as compared with their capture by airlines. Such rents could then be used for funding health, education, transport etc, rather than be distributed to the predominantly foreign owners of SACL's airline customers. (sub. 27, p. v)

Given that the Government is in the process of selling Sydney Airport, it would seem preferable for aeronautical prices to reflect appropriate land values now and hence be fully incorporated in the sale price received by the community, rather than be adjusted later and possibly provide windfall profits to the private operator.

FINDING 8.3

If regulation of Sydney Airport aeronautical charges continues to involve prices set by the regulator on a production-cost basis, aeronautical land should be valued at its opportunity cost rather than at indexed historical cost.

Price restructuring

In its 1996 and 1998 price notifications for Sydney Airport, the FAC made some restructuring of aeronautical charges in an effort to align more closely revenue from particular aeronautical services with the costs of those services. These changes were relatively simple and involved increases in charges for use of the international terminal while (in 1998) making offsetting large reductions in landing charges. In not objecting to these restructurings, the ACCC strongly supported the move towards user-pays pricing in order to provide appropriate signals for efficient use of airport services and for new investment decisions.[27] BARA, Ansett and Qantas did not oppose the 1998 changes to price structures.

In its October 2000 price proposal, SACL (2000) made further changes aimed at aligning prices with costs and also to improve the efficiency of use of congested facilities. The Commission considers that such developments in pricing offer important improvements in the efficiency of use of airport facilities, particularly at an often congested facility like Sydney Airport. More flexibility in pricing and operations should help bring forth the greater efficiency benefits from privatisation.

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26 Some of the peak period rents that accrue to airlines may have supported flights between other cities on which yields may cover marginal, but not average, costs.

27 The ACCC objected to the quantum of the proposed 1996 FAC price increases but not the concept of restructuring prices.

Specific charges for use of facilities, such as aerobridges, provide airport users with the appropriate information for making efficient decisions about consuming particular services. Time-based charges for use of scarce capacity, such as apron space, dissuade excessive use of the facility and encourage more efficient methods of operation, ration existing capacity to those who value it most and provide appropriate investment signals to the airport operator to expand capacity where possible.

SACL also changed the basis of the international terminal charge from a per tonne (maximum take-off weight (MTOW)) per landing charge to a per passenger levy, and the runway charge from per tonne (MTOW) per landing to a per tonne (MTOW) per movement (landing and take-off). The switch to a per passenger charge reflected the view that terminal costs were more directly related to passenger numbers. As noted below, with airline agreement, other charges for international airlines have also been switched to a per passenger basis. By moving to per passenger charges, SACL effectively has transformed the terminal charge to a short-term marginal cost to airlines when considering attracting additional passengers. In turn, this may affect the extent of airlines' price discrimination aimed at attracting marginal passengers as the relevant charges now vary directly with passenger numbers rather than being fixed imposts per aircraft of a particular size.

The ACCC did not object to any of SACL's proposals aimed at improving the efficiency of the price structure.

In August 2001, the ACCC did not object to a revenue neutral proposal by SACL to institute a per passenger service charge for international passengers to replace a series of existing MTOW-based charges covering landing and take off, terminal use and security services. However, for domestic services, the ACCC did object to a proposal to replace the existing aircraft weight-based charges for aircraft movements and security services with a per passenger fee. It considered there were concerns regarding the impact of the change on new airlines which currently had more passengers per unit of aircraft weight than the incumbent operator. However, the ACCC indicated that it was not able to address these concerns adequately in the 21-day statutory period available for considering pricing proposals under the PS Act.

SACL (2000) has also indicated that it is considering the possibility of introducing time-of-day charges and the ACCC has encouraged the development of peak-period pricing for Sydney Airport.[28] However, in the absence of peak pricing, the ACCC's

28 Under its conditions of use of Sydney Airport, SACL has, at its discretion, introduced discounts for airlines introducing new services during off-peak periods and for rescheduling services from a peak to an off-peak period.

discounting of SACL's proposed prices exacerbates the problem of excess demand. To the extent that there already is excess demand for peak-period slots, the resultant smaller increase in charges is likely to benefit airlines holding those slots rather than be passed on to passengers travelling at those times.

FINDING 8.4

The aeronautical price increases implemented at Sydney Airport place its pricing on a fundamentally different and more appropriate (dual-till) basis than that at other core-regulated airports. The significant range of possible outcomes for a number of cost parameters (for example, land values, cost of capital etc) indicates the imprecision of regulatory price setting and the potential for inefficient prices being established by regulation.

If significant excess demand returns at Sydney Airport at peak times, production cost-related or rate-of-return based regulation would be likely to constrain the setting of efficient aeronautical charges for those times.

9 Review of airport regulation: price monitoring, quality monitoring and access regulation

Price-cap and prices-notification arrangements for aeronautical services provided by core-regulated airports are evaluated in chapter 8. This chapter evaluates another element of the price regulation of airport services — price monitoring of aeronautical and aeronautical-related services. The quality of service provision post-privatisation, and ACCC monitoring of quality (established as a complement to price regulation), are also examined.

Airport services are subject to access regulation and general competition law. Although access regulation does not directly regulate prices of airport services, it does provide for the regulation of terms and conditions, including prices, of access to airport services. This chapter also analyses the application of these provisions to core-regulated airports. General competition law has not been applied to airports to date (see chapter 11 for further discussion of these provisions).

The criteria for efficient regulation (outlined in chapter 4) are used to evaluate price monitoring, monitoring of service provision quality, and access regulation.

9.1 Price monitoring of airport services

Prices of some services not subject to the price cap (designated as 'non-aeronautical' services) were monitored at core-regulated airports following the sale of airport leases. These arrangements changed for some airports in October 2001, with monitoring of aeronautical services replacing price caps at Adelaide, Canberra and Darwin airports, and monitoring discontinued, along with price caps, at the other core-regulated Phase 2 airports.

Monitoring of aeronautical prices

As noted in chapter 3, the changes to prices oversight arrangements announced in October 2001 included the introduction of monitoring of previously price-capped aeronautical services at Adelaide, Canberra and Darwin airports. The monitoring

process by the ACCC will be the same as that applying to aeronautical-related services (see section below).

Since October, all three of the above airports have increased their airport charges (chapter 2). As noted in chapter 5 in relation to the exercise of market power, the effects of these changes will take some time to become fully apparent.

Under current monitoring provisions of the *Prices Surveillance Act 1983* (PS Act), the ACCC could respond to price changes by, for example, investigating some price increases. The relevant Commonwealth Minister could then direct the ACCC to undertake an inquiry. However, as noted in chapter 3, the Commonwealth Government has said that it will take into account price changes, together with the Productivity Commission's final report, when considering future airport prices oversight arrangements.

Monitoring of aeronautical-related prices

Aeronautical-related services at core-regulated airports, including Sydney Airport, were never subject to the price cap but were subject to price monitoring following the granting of leases (chapter 3). Aeronautical-related services include aircraft maintenance sites and buildings, aircraft refuelling, and check-in counters and related facilities (for a comprehensive list see chapter 3).

Changes to price regulation at airports in October 2001 included the removal of price caps and price monitoring of aeronautical-related services at several Phase 2 core-regulated airports (Coolangatta, Alice Springs, Hobart, Launceston and Townsville).

In implementing prices oversight arrangements in 1998 for Phase 2 airports, the Treasurer explained why price monitoring, pursuant to s. 27A of the PS Act, was considered to be necessary:[1]

> Price monitoring will allow the ACCC to collect data where the airport operator may have scope to exercise market power but where coverage of the services under the more formal price cap arrangements is not considered warranted. Any abuses of market power detected through the prices monitoring arrangements will be the trigger for consideration of stricter forms of prices oversight. (Costello 1998)

The ACCC is responsible for monitoring aeronautical-related services. It is directed by the Minister to monitor prices, costs and profits (s. 27A, PS Act) and report to the Minister and the public on that monitoring (s. 27B). Guidelines set out the regulatory information requirements for airport operators (ACCC 1998f).

1 A similar comment was made regarding Phase 1 airports (Costello 1997).

If monitoring indicates that further investigation is required, the Minister can direct the ACCC to undertake a public inquiry or approve the ACCC holding an inquiry (s. 18). Powers for the ACCC to obtain information for monitoring purposes, including inquiries, are provided under s. 32, together with penalties for non-compliance.

Evaluation of aeronautical-related price monitoring

The ACCC reports annually on its monitoring of aeronautical-related services at core-regulated airports. The ACCC has not considered that it need investigate prices of any aeronautical-related services, with the exception of fuel throughput levies (appendix E). In other words, airport operators do not appear to have been exercising market power in relation to most of these services. This may explain why the present inquiry has not received many comments from participants regarding the operation of price monitoring, other than those relating to fuel throughput levies.

The price monitoring process, including the public dissemination of information, might have eased any community concern about the potential for operators of privatised airports to exercise market power, and provided assurance that the market is functioning appropriately. The ACCC commented:

> Realistically from time to time there are likely to be areas of the economy where there is considerable public concern about particular pricing outcomes. Government is likely to want to respond to these community concerns. In this situation a price oversight power is required that allows Government to respond. Price monitoring which requires the firm to provide specific cost, profit and price data at regular intervals can be used in the first instance. (sub. 10 to PC 2001c, p. 38)

Price monitoring of aeronautical-related services requires that certain financial information on airport operations be made publicly available, thereby facilitating the transparent reporting of airport performance. While this may have encouraged competitive benchmark comparisons and affected behaviour of some airport operators, this inquiry has not been provided with evidence on these matters.

As noted above, the ACCC, in its monitoring role, has identified no particular monopoly pricing problems apart from the imposition of fuel throughput levies. The ACCC claimed that such levies represented an abuse of market power on the part of airport operators, although this was disputed by airport operators. It recommended that refuelling services be subject to greater prices oversight (appendix E). Although not raised in its regulatory reports, the ACCC (sub. 36) also expressed concern about another monitored aeronautical-related service provided by airport operators — car-parking charges.

In evidence to this inquiry, the Board of Airline Representatives of Australia (BARA) considered that price monitoring was ineffective in controlling the 'monopoly power' of airports, citing increases in fuel throughput levies and staff car-parking charges as examples of the exercise of monopoly power that price monitoring had failed to curtail (sub. 41). (See chapter 6 for a discussion of this issue.)

The preparation of standard information on prices, costs and profits (as set out in the ACCC guidelines) does not appear to have been particularly costly for airport operators, because the information requirements are not large. Nonetheless, Sydney Airports Corporation Limited (SACL), operator of Sydney Airport, commented:

> While the impact of prices monitoring is far less troublesome when compared to the price approval process, it nevertheless does entail compliance costs for both airport operators and the ACCC and experience to date suggests that such cost has generated no net public benefit. (sub. 27, p. 49)

Compliance costs are likely to have been higher where airport operators have been required to comply with additional information requests from the ACCC for its public review of fuel throughput levies. Costs have also been incurred by the ACCC in administering the price monitoring process, particularly when undertaking its public review of fuel throughput levies.

One contentious issue arising from the current price monitoring process is the potential for regulatory creep, that is, the potential for transferring aeronautical-related services from outside the price cap to within it. Regardless of whether additional regulation was warranted (chapter 6), uncertainty has been created for airport operators in not knowing whether monitored services would remain outside the price-cap basket. Moreover, any changes in Commonwealth Government policy relating to the price-cap basket that result in direct adverse consequences for particular parties raise issues of sovereign risk.

The issue of the imposition of fuel throughput levies by airport operators illustrates the potential for such effects and its ramifications (appendix E). The ACCC, in exercising its monitoring power under the PS Act, and bearing in mind the Treasurer's 1998 press release (Costello 1998), undertook a review of the imposition of fuel throughput levies by two airport operators. A discussion paper was released, submissions were sought, additional information was requested from the relevant airport operators, a report was prepared with conclusions and recommendations, and the report was released to the public and submitted to the relevant Minister. Thus the review met many of the requirements for an inquiry as set out in the PS Act, although the ACCC did not conduct a formal 'inquiry' under the Act.

The review recommended that refuelling services, including fuel throughput levies, be transferred from price monitoring to inclusion within the price cap, even though many airport operators had expectations that fuel throughput levies were to remain outside the price cap. The Commonwealth Government has yet to respond to the recommendation.

The ACCC approach to car parking and other price monitored aeronautical-related services at Sydney Airport, in its draft response to SACL's proposal to increase aeronautical prices, also illustrates the potential for services subject to price monitoring to become subject to stricter price regulation. Although the ACCC did not recommend that any of these services become subject to prices notification, it noted that, in the absence of a detailed analysis of aeronautical-related services at Sydney Airport, 'above normal' revenues from aeronautical-related services should be taken into account in determining allowable revenue from notified aeronautical services (ACCC 2001h).[2] However, the ACCC did not present evidence of abuse of market power on the part of SACL in relation to any of these services, despite the Treasurer having specified that abuse of market power would be the trigger for stricter price regulation (see above). The ACCC moved away from this draft decision in its final decision, following a Commonwealth Government Direction that revenues from these aeronautical-related services should not be taken into account (chapter 3).

9.2 Monitoring of quality of service provision

Quality monitoring was established as a complement to price regulation at core-regulated airports. Under price-cap arrangements (and prices notification at Sydney Airport), airport operators may have an incentive to reduce service quality as a means of cutting costs. Several inquiry participants noted that, for this reason, monitoring of service quality by a regulator is essential (for example, International Air Transport Association, sub. 9; Forsyth, sub. 5; Qantas Airways, sub. 48).

As noted in chapter 3, changes to airport price regulation were announced in October 2001. While all price regulation was removed at several core-regulated airports (Coolangatta, Alice Springs, Hobart, Launceston and Townsville), quality of service monitoring under the *Airports Act 1996* continues to apply. Several other core-regulated airports which are now subject to lighter-handed regulation (monitoring of aeronautical services rather than price caps) also remain subject to quality monitoring (Adelaide, Canberra and Darwin).

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2 As noted in chapter 3, aeronautical-related services at Sydney Airport are monitored under Direction No. 25 (replacing Direction No. 21), pursuant to s. 27A of the PS Act, October 2001.

Quality of service provision by airport operators

Monitoring by the ACCC of the quality of services provided by airport operators is described in chapter 3. In particular, until the regulatory changes in October 2001, quality of service monitoring did not apply to any services and facilities that were not subject to price regulation; for example, domestic terminals that were operated by airlines. Since October, the quality of particular services and facilities[3] is being monitored, under the existing Airports Act, at the five Phase 2 airports which are no longer subject to price regulation.

The ACCC has reported on the quality of services provided by airport operators at Melbourne, Brisbane and Perth airports (Phase 1) since 1997-98, and Sydney Airport since 1998-99. Phase 2 airports were not required under the Airports Regulations 1997 to provide quality of service information to the ACCC until the end of 2000-01. The ACCC report is yet to be published.

According to the ACCC, in 1999-00 quality of service for the three Phase 1 airports and Sydney Airport was 'generally satisfactory'. Brisbane Airport appeared to rate highest, with airport users (including airlines and passengers) 'very satisfied' with most of the services and facilities provided. For example, passengers rated waiting time at check-in facilities as 'good' to 'excellent', and airlines rated the quality of runways, aprons and taxiways as 'satisfactory' to 'excellent'. Quality remained comparable to previous monitoring periods (ACCC 2001b).

The ACCC reported that Perth Airport users were satisfied with most of the services and facilities provided. However, the ratings varied substantially for some services. For example, the standard of runways was rated from 'very poor' to 'good'. There were marginal declines in the ratings from 1998-99 (ACCC 2001d).

At Melbourne Airport, users were also satisfied although there was a decline in airline satisfaction, for example, with regard to gate allocation (ACCC 2001c). The report for Sydney Airport was similar — users generally were satisfied although airlines were dissatisfied with some services and facilities. Six airlines using Sydney Airport rated gate availability as 'very poor' to 'poor', and seven rated availability of aerobridges as 'very poor' to 'poor'. The ACCC was unable to reach a conclusion on whether service quality had declined from the previous reporting period (ACCC 2001e).

Participants to this inquiry have also commented on the quality of services provided by airport operators. Melbourne Airport noted that it had won a number of awards

3 The same services and facilities as were quality monitored prior to the regulatory changes of October 2001.

each year from 1997 (sub. 7). SACL stated that it 'provides high levels of quality of service for passengers and airline customers' (sub. 27, p. 33) and recently had completed major improvements, including an upgrade of the international terminal, that had significantly increased service quality. Brisbane Airport was named 2001 'Airport of the Year — for Aviation Excellence' by the Australian Airports Association.

Qantas, on the other hand, commented that there had been a reduction in the quality of services at some airports, and cited Westralia Airports Corporation, operator of Perth Airport, as an example (trans., p. 262). The airline was also critical of the quality of some services at Sydney Airport, as was BARA, which noted that the baggage-handling system at Sydney Airport (international terminal) was considerably worse than that at airports in other countries. BARA was also critical of the quality of particular services at Melbourne Airport (trans., pp. 228–9). However, BARA also noted that anecdotal evidence from members suggested that the quality of services provided by privatised airports had improved (sub. 41).

ACCC monitoring process

The ACCC's reporting (summarised above) on the quality of service provision by airport operators needs to be viewed in the context of the process adopted by the ACCC to monitor quality. There are some problems relating to the process that affect, or have the potential to affect, the robustness of the ACCC's conclusions. These problems are not unique to airport quality monitoring in Australia; they have been raised in debate about this issue in other countries such as the United Kingdom. [4]

First, airport operators do not have direct control of many of the services provided at airports. For example, check-in, customs and immigration, cargo processing and on-time airline services are not the sole responsibility of airport operators. Other organisations involved, such as Airservices Australia and Australian Customs Service, are noted in chapter 3. Yet the services they provide can affect the services provided by airport operators. For example, aircraft delays can be affected by factors beyond the control of airport operators, and passenger perceptions of delays can be influenced by customs processing. This issue is recognised by the ACCC in its regulatory reports.

Second, to date ACCC reports on quality appear to have placed emphasis on survey results rather than on the objective indicators (described in chapter 3), perhaps because there have been few significant changes in the objective indicators for

4 See, for example, CAA (2000d) and related submissions, and Betancor and Rendeiro (1999).

airports. Passengers' perceptions are subjective and, as noted above, may be influenced by factors outside the control of airport operators. Surveys of airlines' views also constitute a subjective form of assessment. Although the regulatory reports indicated that there were many favourable responses by airlines about services provided by airport operators (also noted by Qantas, sub. 48), Melbourne Airport commented:

> It seems to us that individual airlines use this [airline surveys] as a device to have a 'free kick' at airports and often use it as a forum for a 'pay back' against an airport for taking a particular line in a commercial negotiation. (sub. 7, p. 41)

The ACCC (2001e) commented in respect of its monitoring of Sydney Airport, that at the time of the 1999-00 survey of airlines 15 of the 23 airline respondents to the survey were taking legal action against SACL.

Both SACL (sub. 27) and Melbourne Airport (sub. 7) considered the airline responses to be evidence of 'regulatory gaming'. However, BARA considered that airlines had 'no real incentive to act in this manner' (sub. 41, p. 58).

Third, airport operators may be undertaking maintenance or building work that temporarily disrupts operations and affects service quality. This disruption is not necessarily taken into account in the ratings, although the ACCC does make a note of such issues in its reports.

Fourth, there are some technical problems with airline and passenger surveys. For example, as BARA noted, responses from airlines that rarely use an airport are given equal weighting to major user airlines (sub. 41). Another problem relates to the sample surveys of passengers at airports. Sampling biases may be associated with passenger surveys, particularly as a result of the apparently non-systematic way in which non-responses are handled in face-to-face interviews at airports.

Finally, there is the potential for a misleading assessment of the objective indicators, depending on how a change in these indicators is interpreted. For example, a reduction in the number of aerobridges at an airport may be viewed as adverse performance if it is assumed that more is better than fewer and that all airport users desire the same high quality levels. Virgin Blue, a low-fare airline compared with Qantas, prefers more basic services and facilities, such as no aerobridges, to match its customer profile.

Evaluation of quality outcomes

Bearing in mind the above problems, the ACCC reports and inquiry participants' comments suggest that the *overall* quality of service provided by operators at Phase 1 airports has not deteriorated under the price cap since privatisation.

This outcome is not entirely unexpected. As noted in chapter 7, airport operators have incentives not to reduce service quality, particularly if passengers and airlines are highly sensitive to quality levels. Related to this are an airport's commercial (especially retail) operations, which are an important, and increasing, source of airport revenue. The success of these operations depends heavily on growth in passenger traffic and the provision of an environment conducive to retail spending by passengers. Neither is likely to be achieved by a deterioration in aeronautical service quality. However, BARA commented that airports have an incentive to reduce the quality of services and cited, as an example, Sydney Airport's investment in additional remote gates[5] that reduced costs for the airport but increased costs for the airlines (sub. 41). In this regard, it is relevant to note that Sydney Airport may face somewhat different incentives from those of other core-regulated airports because it is constrained by limited airside space.

Airport operators are at the commencement of long-term leases — 50 years with an option to renew for a further 49 years. If airport operators seek to remain commercially viable over this period, the deliberate running-down of the quality of existing assets in the short run is unlikely to enhance that viability. One of the key objectives of Australian Airports (Townsville) in its Townsville Airport 2018 Master Plan is to improve service quality (sub. 14). Under the Phase 1 and Phase 2 lease agreements, any developments at an airport, such as extending a building or constructing a road, must have regard to 'reasonably expected' quality standards, and there are procedures to address non-compliance.

Several participants (for example, the Australian Airports Association (sub. 15) and Northern Territory Airports (sub. 25)) commented that investment at airports had been impeded by the regulatory regime in relation to necessary new investment (NNI), and hence had restricted potential improvements in service quality. In other words, future quality levels may be affected by application of past or current regulatory arrangements. (Chapter 8 provides more detail on the effect of the ACCC's implementation of NNI provisions on investment by airport operators.)

5 Remote gates facilitate the embarking and disembarking of passengers when the gates adjacent to a terminal are full, thereby enabling capacity to increase during peak-traffic periods. Remote gates are distant from the terminal, usually requiring passengers to travel to and from the terminal by bus.

Evaluation of ACCC monitoring

As noted above, there are some problems relating to the process that affect, or have the potential to affect, the robustness of the ACCC's monitoring process. It was also noted that both BARA and Melbourne Airport were critical of various aspects of the quality monitoring process.

BARA, more generally, commented that the process is 'ineffectual' and both parties also noted that the ACCC did not appear to use much of the information collected. BARA supported Melbourne Airport's suggestion that:

> If quality of service monitoring is to be a feature of any future regulatory system, which we believe it should, the scope of monitoring and its objectivity needs to be seriously examined. Any new set of arrangements must be auditable, systematic (rather than ad hoc and anecdotal), and possess safeguards against gaming. (sub. 7, p. 41)

ACCC monitoring relates to movements in indicators of quality, rather than standards.[6] ACCC monitoring therefore makes no judgement about the absolute level of quality, leaving this as a matter of commercial negotiation between airport operators and users. The Commission considers this to be appropriate but, as mentioned above, there is likely to be a judgement implicit in the monitoring assessment process that higher quality of service provision is preferable to lower quality.

Several airport operators (for example, Melbourne Airport, Brisbane Airport Corporation (BAC) and SACL; subs 7, 8, 27) commented that they would, in the absence of ACCC monitoring, undertake their own monitoring of service quality because it is considered to be good business practice. Melbourne Airport stated that 'quality of service monitoring is important and even if the law did not require it, Melbourne Airport would undertake it in some form or other' (sub. 7, p. 40). Melbourne Airport and BAC use the information obtained from monitoring to help identify areas for improvement in discussions with airlines.

In the United Kingdom, even though there is no regulatory obligation to monitor service quality, BAA plc (part-owner of Australia Pacific Airport Corporation (APAC)[7]), undertakes its own quality of service monitoring, including extensive passenger surveys, to monitor trends in quality and to identify problem areas in need of remedial action (CAA 2000d).

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6 For a discussion about quality monitoring and standards, see CAA (2000d), and Betancor and Rendeiro (1999).

7 APAC operates Melbourne and Launceston airports (through its subsidiaries Australia Pacific Airports (Melbourne) and Australia Pacific Airports (Launceston) respectively).

The ACCC monitoring process inevitably imposes compliance costs on airport operators, including direct staff costs, costs associated with outsourcing of passenger surveys, and the cost of overheads. These costs appear to be modest at major core-regulated airports. Melbourne Airport noted that 'the marginal regulatory cost is well below the full cost' because, as noted above, it would undertake quality of service monitoring in any event (sub. 7, p. 42). And Capital Airport Group considered that reporting requirements were not 'overly burdensome' (sub. DR75, p. 9). The annual regulatory cost is likely to be of greater significance to the smaller Phase 2 airports, such as Alice Springs and Launceston.

The public dissemination of information on service quality by the airport operators and the ACCC appears to be a positive feature of the monitoring process. Transparency of reporting can encourage airport operators to improve service quality and can form a basis for improved consultation and negotiation between airport operators and users. From the perspective of airport operators, the public nature of the monitoring process can provide a credible source of evidence about service quality. Moreover, comparisons of quality ratings among airports may facilitate competitive pressure among operators to improve service quality.

FINDING 9.1

The overall quality of service provision by airport operators at monitored airports does not appear to have deteriorated since monitoring commenced. This outcome reflects to a large extent the commercial incentives for airport operators not to reduce service quality.

Although there are some problems with the quality monitoring process, it provides transparency of reporting and facilitates some comparison between airport operators at relatively low cost.

9.3 Access regulation

While access regulation does not directly regulate the prices of airport services, it does provide for the regulation of the terms and conditions — including price — of access to the services of essential facilities. Access regulation as an alternative or supplement/complement to direct price regulation of airports is discussed in chapter 11.

Two separate legislative instruments provide for access to airports — an airports-specific instrument (s. 192 of the Airports Act, which applies to privatised core-regulated airports), and a general instrument (Part IIIA of the *Trade Practices Act 1974* (TP Act), which potentially applies to all airports). These regimes are

described in chapter 3. In this section, the application of these access regimes to airports is assessed. The Commission's report on the National Access Regime (PC 2001a) provides a detailed discussion of Part IIIA.

Although the objectives of s. 192 are not enunciated in the Airports Act, the second reading speech for the Airports Bill suggested the primary policy intent was to facilitate access for new passenger airlines (HoR 1996, p. 1308). That the Commonwealth Government introduced an airports-specific access regime for privatised airports suggests it considered the Part IIIA provisions would not adequately facilitate access to the services these airports provide. However, as Part IIIA was in its infancy when s. 192 was introduced, the applicability to airports was unclear at the time. As it turned out, Part IIIA has since been used to gain access to airport facilities (see below).

Undertakings

Section 192 provides for airport operators to lodge undertakings setting out terms and conditions under which access to airport services will be provided with the ACCC (chapter 3). However, lodgement of undertakings has been limited (box 9.1).

Box 9.1 Access undertakings

Melbourne and Perth airports — the only airports to submit access undertakings during the designated period following privatisation — submitted draft undertakings to the ACCC in early 1998. The undertakings covered a range of services within and outside the price cap. Both undertakings committed airport operators to provide access at prices consistent with the price cap for capped services, and at prices determined by the operator or through negotiation between the parties for services outside the cap. The undertakings also established mechanisms for dispute resolution.

The ACCC did not accept either draft undertaking. In the case of Perth Airport, the ACCC expressed concerns about the enforceability of the undertaking, the adequacy of information provided to access seekers as part of the negotiation process and the dispute resolution provisions. In relation to the Melbourne Airport draft undertaking, the ACCC was concerned about the enforceability of the undertaking, pricing for services outside the price cap and the limited scope for negotiation. Neither airport pursued lodgement of an undertaking beyond this point.

Sources: ACCC (1998c, d; 2000a, e).

APAC stated that it did not pursue lodgement of an undertaking beyond the draft stage because:

> … we had formed a view that any undertaking that would be acceptable to the ACCC would actually leave us in a worse position than if we were to be subject to declaration

> and subsequent arbitration. This was particularly the case where the ACCC was seeking an undertaking that effectively extended into operational and commercial areas not intended to be subject to Part IIIA. (APAC 2000b, p. 4)

The ACCC's rejection of the draft undertakings submitted by Melbourne and Perth airports appears to have discouraged other airport operators from submitting undertakings. SACL stated:

> The experiences of Melbourne and Perth airports in (unsuccessfully) pursuing access undertakings resulted in no Phase 2 airports even attempting this route. The costs, uncertainty and ultimate lack of flexibility have been factors in the deterrent. SACL has similarly investigated the resources required to complete a successful Part IIIA Undertaking and decided it is too onerous and uncertain to warrant pursuit. (sub. 27, p. 46)

Airport operators' ability to offer undertakings for some facilities was also limited by other factors. For example, airport operators were not in a position to offer undertakings for those domestic terminals for which long-term leases were held by incumbent airlines (chapter 3).

The relatively short period in which undertakings could be lodged (12 and 24 months following privatisation for Phase 1 and 2 airports respectively), at a time when airport operators were also required to develop draft airport master and environment plans (chapter 3), and the fact that there was no scope for appeal against an ACCC decision not to accept an undertaking, may also have been factors contributing to the limited use of the undertakings provision.

The ACCC determines whether a given service is declared under s. 192 following a request for a determination from an access seeker. As no undertakings were in place at the end of the designated period, airport services at privatised core-regulated airports were declared automatically. Rather than listing declared services, criteria for declaration of services were specified in the legislation (chapter 3).

Access determinations

To date, application of the access provisions to airports has been limited. Delta Car Rentals (Delta) and Virgin Blue sought determinations that services at Melbourne Airport were covered by the automatic declaration of 'airport services' under s. 192. Australian Cargo Terminal Operators (ACTO), now deregistered, sought declaration of various services at Melbourne International Airport (MIA) and Sydney International Airport (SIA) under Part IIIA (box 9.2).[8]

[8] ACTO applied for voluntary deregistration in October 1999. Its status, according to the Australian Securities and Investments Commission, is 'deregistered'.

Box 9.2 Application of access regulation to airports

Section 192

Delta Car Rentals

Delta operated an off-airport car rental service and short- and long-term car parks close to Melbourne Airport, and provided a shuttle bus service to transport passengers to and from the terminals. (Delta acquired National Car Rentals and signed a licensing agreement with Europcar International in late 2000. It now operates an on-airport car rental service and an off-airport car-park service.) When Melbourne Airport was operated by the Federal Airports Corporation (FAC), Delta paid a fee per car rental for access and operated from the landside drive area adjacent to the terminals. The terms and conditions of access offered by Melbourne Airport following privatisation required Delta's car rental operation to pay a turnover-based access fee and to operate its car rental service from the designated meeting point in the car park opposite the terminals. While a reduced turnover-based access fee was agreed through commercial negotiation between the parties, Delta did not accept the airport operator's requirement that it operate from the designated meeting point. On 21 October 1998, Delta requested that the ACCC make an access determination for the service of 'the landside drive area to pick up and drop off passengers'.

On 17 May 1999, the ACCC determined that the service of 'the provision of landside roads and associated vehicle facilities for dropping off and picking up passengers at Melbourne Airport' is a declared 'airport service' under s. 192. Neither party has sought arbitration of the terms and conditions of access to the service. The declaration will expire on 1 July 2002, when the Minister's determination under s. 192 that airport services at the airport are declared for the purpose of Part IIIA expires.

Virgin Blue

On 2 March 2001, Virgin Blue lodged an application with the ACCC for a determination that the service of the use of the new multi-user domestic terminal (MUDT) 'for the purposes of processing arriving and departing domestic airline passengers and their baggage at Melbourne Airport' was an 'airport service'. The application followed negotiations over the terms on which Melbourne Airport would grant Virgin Blue access to the MUDT on a long-term basis.

The ACCC released its draft determination in October 2001, stating that, even though the service met the criteria for definition as an 'airport service' under s. 192, determining that domestic terminal facilities are 'airport services' was unlikely to result in significant benefits. Thus the ACCC used its discretionary powers under s. 192 to determine that the use of the MUDT was not an 'airport service' (ACCC 2001l).

(Continued next page)

Box 9.2 (continued)

Part IIIA

Australian Cargo Terminal Operators

On 6 November 1996, ACTO — a provider of cargo terminal services to international airlines — sought access to various freight handling and related services provided by facilities owned by the FAC at Melbourne International Airport (MIA) and Sydney International Airport (SIA). These included the services provided by freight aprons and hard stands needed to load and unload international aircraft, areas for moving and handling freight, equipment storage areas, and land to construct cargo terminals.

The National Competition Council (NCC) recommended on 8 May 1997 that the services provided by the freight aprons, hard stands and freight moving and equipment storage areas at MIA and SIA be declared. It recommended declaration of the services at SIA for a period of five years, and declaration of the services at MIA such that declaration expired 12 months after leasing (to allow an undertaking to be lodged during the designated period under s. 192). The NCC did not recommend declaration of land for constructing cargo terminals at either airport as it considered ACTO could construct cargo terminals off-airport. The Treasurer accepted these recommendations and declared the services on 30 June 1997. The declaration of services at MIA expired on 1 July 1998.

The FAC and, subsequently, SACL, applied to the Australian Competition Tribunal for a review of the Treasurer's declarations at SIA. It proposed the adoption of a tender process to allocate rights to provide ground-handling services as an alternative to declaration. The Tribunal handed down its decision affirming the Treasurer's decision to declare the services on 1 March 2000. The declarations at SIA are effective from 1 March 2000 to 28 February 2005. The ACTO declarations are the only declarations made under Part IIIA in any industry to date.

Sources: ACCC (1999a, d; 2001j); ACT (2000); NCC (2001); PC (1998a).

Issues arising from access determinations

Although determinations under the access provisions to date have been limited, they provide some insights into interpretation of the criteria by regulators and the courts, compliance costs and declaration processes.

Delta determination

As outlined in box 9.2, Delta sought access to the landside drive area adjacent to the terminals, while APAC argued that Delta should operate from the designated

meeting point:

> A key obligation for an airport operator is to efficiently manage the differing requirements of airport customers in a way that ensures the good order and management of traffic flow in and out of the airport … In order to ensure that the airport forecourt operates safely and without unacceptable congestion certain categories of users (buses, taxis, limousines, and, now, off-airport car rental courtesy buses) are required to use specific facilities outside the scope of general public roads. It is the case that other off-airport car rental companies are currently utilising the DMP [designated meeting point area] in a satisfactory manner. (APAC 1998, pp. 5–6)

The ACCC considered that Delta's definition of the service as 'the landside drive area to pick up and drop off passengers' was too narrow. It therefore used its powers under ss 192(4A) and (4B) to define the service as 'the provision of landside roads and associated vehicle facilities for dropping off and picking up passengers at Melbourne Airport', where 'landside roads and associated vehicle facilities include landside roads, roads through carparks, kerbside parking areas, the designated meeting point area (accessed via the carpark road) and any other vehicle access facilities' (Commonwealth of Australia Gazette, No. GN 25, 23 June 1999, p. 1864).

A number of submissions to the ACCC investigation argued that this broader definition was inappropriate, including BAC, Budget Car Rentals, Avis Australia and Ansett. By broadening the definition of the service to include substitutes for the landside drive such as the designated meeting point, the question becomes whether landside access to the airport, rather than access to the landside road outside the terminal, is necessary for operating and/or maintaining civil aviation services at the airport. This broadening of the definition of the service in the Delta determination may have resulted in the service meeting the s. 192 declaration criteria when it otherwise might not have done so. Nevertheless, in April 1999 the ACCC (1999d) determined that the service was a declared airport service. APAC (2001) suggested in a submission to the National Access Regime inquiry that, if declaration had been sought under Part IIIA, it is unlikely that the application would have met either the competition test or the national significance test.

Virgin Blue determination

As noted in box 9.2, Virgin Blue requested that the ACCC determine whether the services provided by the use of the multi-user domestic terminal (MUDT) were 'airport services' under s. 192 of the Airports Act. The ACCC (2001l) has released a provisional finding that the relevant service is not an airport service for the purposes of s. 192.

In assessing Virgin Blue's request, the ACCC defined the relevant service as:

> The use of domestic terminals and related facilities for the purposes of processing arriving and departing domestic airline passengers and their baggage at Melbourne Airport. (ACCC 2001l, p.19)

Although a slightly broader definition of the service than proposed by Virgin Blue, it is similar to the definition suggested by Australia Pacific Airports (Melbourne) (the operator of Melbourne Airport), and consistent with Qantas' proposal.

The ACCC also concluded that this service met the criteria for definition as an 'airport service' under s. 192(5) of the Airports Act. The ACCC found that the relevant service was:

- necessary for civil aviation (as required under s. 192(5)(a)); and
- provided by significant facilities which cannot be economically duplicated (as required under s. 192(5)(b)).

However, in reaching this provisional finding, the ACCC made use of its discretionary powers granted under s. 192(4B) of the Airports Act. The ACCC argued that services provided by the MUDT were regulated under the notification provisions of the PS Act. Prices for the use of the MUDT had already been approved by the ACCC under the NNI provisions of the notification. Hence, the ACCC argued that:

> In these circumstances it is not obvious that determining domestic terminal facilities are 'airport services' would yield significant benefits. The issues which would be canvassed in the event that the ACCC was later called upon to determine a dispute over access to the MUDT are likely to overlap considerably with the issues considered under the NNI approval process. In the present circumstances it is not, therefore, obvious that a determination along the lines sought by Virgin Blue would promote competition. (ACCC 2001l, p. 26)

The ACCC has, in effect, decided to circumvent the arbitration process which may have been initiated under the access provisions (Part IIIA) of the TP Act if the service had been declared an 'airport service' under s. 192. The ACCC decision to use its powers under s. 192(4B), while demonstrating the scope for discretion, may also increase uncertainty among industry participants as to what services would be defined as 'airport services' in any future determinations. The ACCC noted that the draft determination:

> … reflects the factual landscape surrounding Virgin Blue's application. It is emphasised that the ACCC might form a different view on the appropriateness of a determination of similar facilities in other circumstances. (ACCC 2001l, p. 27)

ACTO determination

The ACTO declarations at MIA and SIA under Part IIIA (box 9.2) illustrate that the Part IIIA declaration criteria tests are also open to interpretation. While ACTO sought access to various freight-handling and related services, the National Competition Council (NCC) and Australian Competition Tribunal found that the relevant facilities providing those services were the whole of MIA and SIA. Thus, it was these facilities that were judged against the natural monopoly and national significance tests.

The ACTO declarations also raised a number of other issues relating to the interpretation of the Part IIIA criteria. These are considered at length in the Productivity Commission's report (PC 2001a) on the review of the National Access Regime. The Commission recommended that the first declaration criterion be strengthened,[9] and that subsequent declaration decisions be reviewed in the next review of Part IIIA with a view to determining whether further strengthening of criteria is required.

The SIA declarations under Part IIIA (box 9.2) illustrate that there is scope for considerable delays in the declaration process. ACTO applied to the NCC for declaration of a number of services at SIA in November 1996. While the Minister declared the services approximately eight months later, the FAC applied to the Australian Competition Tribunal for a review of the decision. The Tribunal handed down its decision affirming the declarations on 1 March 2000 — more than three years after ACTO's application. The administrative and legal costs of these declarations are likely to have been significant, though insofar as precedents have been determined, these costs should not all be attributed to this specific case.

Summary

The limited use of s. 192 to date makes it difficult to assess its contribution to providing access at privatised core-regulated airports. The Delta determination supports the view that the s. 192 declaration criteria are somewhat less stringent than the Part IIIA criteria. However, the draft determination on Virgin Blue indicates that even when the s. 192 criteria are met, the ACCC can use its discretionary powers to make a negative determination. Whether airports warrant continuation of special access provisions is discussed in chapter 11.

9 Declaration would have to promote a *substantial* increase in competition in another market, rather than simply promoting competition in that market.

The extent to which automatic declaration of airport services and relaxation of the declaration criteria under s. 192 might have contributed to the achievement of the Commonwealth Government's stated objective of facilitating access for new domestic passenger airlines is unclear. Domestic terminal lease agreements require incumbent domestic airlines, on application, to make some gates at their terminals at some core-regulated airports available to new entrants (chapter 3). However, the likelihood that new entrants will apply for access to these gates has been reduced by the agreement by operators of a number of airports to develop new domestic common-user terminal facilities. (Brisbane Airport already had common-user facilities.) The potential for increased passenger throughput may have provided the incentive to develop these facilities, coupled with scope for charging for these facilities under NNI provisions. If airport operators had not developed common-user terminal facilities, incumbent domestic airlines (as lessees of domestic terminals), rather than airport operators, are more likely to have been subject to access determinations. This suggests that s. 192 is unlikely to have been instrumental in facilitating access for new domestic passenger airlines.

FINDING 9.2

Though privatised core-regulated airports have facilitated access for new entrant airlines, airport-specific access provisions (s. 192 of the Airports Act) do not appear to have been instrumental in achieving this outcome.

The successful use of Part IIIA by ACTO to obtain access declarations at MIA and SIA also demonstrates that the general access provisions can be used to gain access to airport services. However, these declarations have led to some concern about interpretation of the Part IIIA criteria. The Productivity Commission in another inquiry has recommended somewhat stronger declaration thresholds (PC 2001a).

10 Regulatory options: cost-based and incentive regulation

Under the terms of reference, the Commission is required to identify and assess alternatives to the price regulation implemented following the sale of airport leases. In this and the next chapter, the main regulatory options are explored. This chapter outlines cost-based and incentive regulation options. Further, issues relating to the form and implementation of a price-cap regulatory regime are discussed. Issues concerning the coverage of regulation — relating to single-till and dual-till regulation — also are discussed. Chapter 11 assesses other regulatory options: price monitoring, and access and anti-competitive conduct regulation, including price undertakings and commercial agreements.

10.1 Cost-based and incentive regulation

Cost-based regimes have a long history in the United States, the most common being rate-of-return regulation. Incentive-based regulation — including price caps[1] and benchmark regulation — was developed partly in response to the problems of cost-based regulation. Cost-based and incentive regulation are discussed below, as are the relative merits and disadvantages associated with these approaches to regulation, and the options available for stricter price regulation of airports in Australia.

Cost-based regulation

Cost-based regulation sets prices that are based directly on the costs of the regulated firm. Although there are other types of cost-based regulation,[2] rate-of-return regulation is the predominant form. Implementation of rate-of-return regulation

1 The term 'price cap' covers a multitude of regulatory regimes, including where the firm has all prices subject to a strict price ceiling with no adjustment process. The process described here is based on the Littlechild (1983) Retail Price Index (RPI)-X form of the price cap.

2 For example, return-on-cost allows the firm to charge a specific mark-up over total costs.

involves the regulator imposing a 'fair'[3] return on capital assets and then setting prices to deliver this outcome. The objective of rate-of-return regulation is to ensure that prices are set at a level that allows ongoing supply of the goods or services in question (including investment) by the regulated firm, but are not set so high as to allow excess profits.

Though cost-based regulation could in principle achieve efficient pricing, in practice it has several major disadvantages.

- The first is the complex informational requirements. The regulator, using information provided by the firm on its projected operating and capital costs, asset base and projected sales, must determine what constitutes a 'fair' rate of return (including an assessment of risk), whether the operations and proposed investment are efficient, and then what would be appropriate unit prices over the regulatory period.
- Given the marked information asymmetry between the firm and regulator there is an incentive for cost-padding by the firm, including, for example, through higher labour costs.
- The regulated entity may tend to use more capital than if it were unregulated. If the allowed rate of return is set above the cost of capital, then the firm has an incentive to expand the capital base to increase profitability.[4] This is known as the Averch–Johnson (A–J) effect.[5] Thus, the regulated firm may have an incentive to use an inefficient mix of inputs in production, resulting in an inefficiently high capital/labour ratio which, in turn, results in higher production costs for a given amount of output.
- The prices for each good or service often are set individually such that price equals cost. This requires the allocation of any common costs.[6] This essentially arbitrary process may increase efficiency losses by moving away from more efficient discriminatory pricing that recovers common costs more from where demand is least responsive to price changes.

3 'Fair' is commonly used to describe a desired rate-of-return for the industry and includes a risk-adjusted return on capital.

4 There may be other reasons for the monopolist to over-invest, for example, preemptive investment to discourage new entrants.

5 After Averch and Johnson (1962), who first analysed the problem. For this result to hold, the 'fair' rate of return must be above the cost of capital. Kahn (1988) notes that the A–J effect may offset the effects of under-investment due to monopoly and encourage risk-taking and output-expanding investment.

6 Common costs may be allocated in a variety of ways, including according to revenue and output shares, though essentially any allocation is arbitrary. The relative merits and problems of allocating common costs are discussed by Europe Economics (2001).

- Rate-of-return regulation that ties prices to costs incurred by the firm may not be appropriate where there is congestion and new facilities need to be built. Efficient pricing needs to be linked to opportunity costs.
- The risk of any investment may be borne largely by customers, to the extent that the regulated firm is able to pass through costs into higher prices.

The fundamental problem with rate-of-return regulation is that because the regulation is effectively cost-plus and because prices are typically reset on an annual basis, the regulated firm will not benefit from cost-reducing changes as any resulting savings are passed through to the customer.

There have been attempts to improve the outcomes from cost-based regulation. Benchmarking techniques have been applied to overcome information problems inherent in rate-of-return regulation, though with limited success (discussed below). Another approach has been profit-sharing (or sliding-scale) regulation which is a variant of rate-of-return regulation. In this approach, after the profit results have been calculated for a designated period, any excess profits or profit shortfalls are shared with the customers. This can be done through either refunds or future price adjustments. These methods are designed to narrow the gap between costs and revenues, thereby increasing allocative efficiency, without adversely affecting the incentives for productivity improvements. A profit-related sliding scale requires an explicit rate-of-return mechanism, so the information requirements can be cumbersome.

Incentive-based regulation

In view of the poor incentive for productive efficiency of cost-based regulation, other forms of regulation have been developed. These attempt to provide regulated firms with appropriate incentives for efficient supply and price structures, while at the same time encouraging firms to implement efficient price levels (and earn normal profits) over time. As summarised by Vogelsang:

> … [incentive-based regulation] means that the regulator delegates certain performance-related decisions to the firm and that the profits of the regulated firm depend on performance measures of the regulator. Incentive regulation makes use of the firm's information advantage. The regulator thus controls less behavior but rather rewards outcomes. (Vogelsang 2001, p. 1)

Price caps are the main incentive mechanism used by regulators, though there are many variations that fall under the price-cap banner. Price caps have their theoretical basis in the work of Vogelsang and Finsinger (1979), with Littlechild (1983) developing a practical method for the implementation of price caps for the UK telecommunications industry (box 10.1).

Box 10.1 **Vogelsang and Finsinger and Ramsey pricing**

Economic efficiency generally requires that prices reflect marginal costs. However, because airports have natural monopoly characteristics and substantial fixed costs, pricing at marginal cost is not feasible in the long term. A desirable objective in this situation is to price to cover average costs but in a way that minimises efficiency losses. A standard economic solution in multi-product firms has been to implement 'Ramsey pricing', where the setting of prices reflects the inverse of the demand elasticity for the good or service. Thus, the less price responsive that demand for the good or service is to price changes, the higher the price.

Vogelsang and Finsinger (1979) proposed a method whereby a firm, under certain assumptions, will set prices that satisfy Ramsey pricing conditions and earn sufficient revenue to stay in business. This mechanism allows a firm to choose its own price structure as long as it remains within a certain average price level for the regulated basket of goods or services. Based on this theoretical approach, Littlechild (1983) developed price caps that were first applied in the United Kingdom.

A price cap specifies the maximum price for a good or service over a certain period. Typically, price increases are constrained to a level determined by an index — commonly the rate of inflation (which serves as a proxy for exogenous rises in the prices of inputs) — minus an X factor that (predominantly) accounts for expected productivity improvements in the regulated firm. Any cost savings achieved beyond the rate of inflation minus X adjustment accrue to the firm within a given regulated period.

The major advantages of price caps are that:

- They are less susceptible to the risk of over-capitalisation by the firm and avoid the incentives for productive inefficiency that accompany cost-plus regulation. Given that the regulated firm has the right to retain profits earned during the designated period, there is an incentive to produce as efficiently as possible and to increase sales (and thus, if there are economies of scale, reduce unit costs). Some of these expected benefits will be shared with consumers via the setting of the X.
- They allow for the adjustment of prices of goods and services being regulated, subject to the requirement that the weighted average increase in prices of goods and services in the 'basket' is within the cap. This allows for flexibility in pricing, including Ramsey pricing (box 10.1), and adjustment to accommodate consumer tastes and preferences, leading to a gain in overall efficiency that can benefit both consumers and producers.
- The risk of investment, in principle, is shared between the regulated firm and its customers, because a rate of return is not specifically guaranteed.

- Price caps are forward looking in that they encompass forecasts of expected productivity gains as well as future demand and cost levels.

As with cost-based regulation, however, the application of price caps confronts a range of difficulties. A major practical issue, if prices are to move towards efficient levels over time, is that the Xs must be reset at regular intervals in line with the costs of the regulated firm (including a reasonable rate of return on assets). In other words, there is a tendency for price caps to converge over time to cost-based, rate-of-return regulation, with many of its associated incentive problems. One option is to set starting prices and/or the Xs without reference to the costs or rate-of-return of the firm, but this approach could have serious consequences if prices were to move too far away (lower or higher) from efficient levels (arguably the current situation for many core-regulated airports — chapter 8).

Typically, therefore, price-cap regulation is applied with regular reference to actual costs of the firm (and/or costs of other firms in the industry). Box 10.2 briefly outlines the building-block approach to assessing allowable costs used by the ACCC to determine 'efficient' prices.

When there is regular reference to the costs of the firm, the essential remaining difference between cost-based and price-cap regulation is the interregnum offered to the regulated firm, during which it can retain profits arising from cost savings beyond those incorporated in X values. But, viewed in this way, price-cap regulation simply amounts to cost-based regulation with longer lags: in other words if a price-cap regime were reviewed yearly with resetting of prices or adjustment of the X factor related purely to the costs of the firm, then the two regulatory regimes — and their outcomes — would be indistinguishable. The major additional feature of price caps is that they can be used to stimulate a more efficient cost base.

Thus, if the review periods for a price-cap regime are short, then the incentives for cost reduction are limited because prices closely track actual costs. If the review periods are longer (perhaps three to five years), then the incentive to reduce costs by the regulated firm — particularly early in the period — is stronger, because it can retain part of the profit resulting from any cost-saving measures. (This assumes, of course, that the regulator does not intervene within the designated regulatory period and that the resetting of the price caps is always forward looking.) However, as the price-cap review is approached, there may be an incentive for the airport to inflate costs to obtain a lower X over the next period.

Box 10.2 Regulatory determination of 'efficient' prices

Determination of allowable prices is a difficult task. The ACCC has recommended an 'accrual building block' approach, based on forecasts of the cost of service over the regulatory period. The maximum allowable revenue (MAR) is a sum of the projections of the return on capital, depreciation and operating and maintenance expenditure. Having determined the level of costs, allowable prices are determined after forecasting the level of demand for the airport's services. While estimating operating and maintenance expenditure is relatively straightforward, the assessment of the other components requires difficult judgements. Some of the major decisions required to determine the MAR are:

- *Assets (other than land) valuation*. Asset values are critical in determining both allowable depreciation charges and returns received by capital. The estimated cost of capital is applied to the depreciated asset base to determine the revenue required to compensate for the opportunity cost of funding the assets. There is no uniformly accepted approach to the valuation of assets. The ACCC recommends that a replacement cost method — depreciated optimised replacement cost (DORC) valuation — be used. However, an historical-cost approach — such as depreciated actual cost (DAC) — may not be inappropriate for firms where capital costs are relatively stable over time.
- *Land valuation*. For price regulation of core-regulated airports, the valuation of land can be particularly important as a result of the relatively high proportion of high-valued land in airport assets. It generally would not require a DORC valuation because it tends not to depreciate, although the optimal land input can be influenced by technological developments and input price changes. Opportunity cost and historical cost are two approaches that have been used by regulators to value land. These two approaches can produce very different land valuations and hence allowable revenue and prices. The historical cost approach used by the ACCC in the valuation of land for Sydney Airport resulted in a land valuation significantly below the current replacement cost valuation proposed by Sydney Airports Corporation Limited (SACL). Given that the next best use is not directly observable, there are several approaches to estimating the opportunity cost of the land, all of which require the resolution of difficult conceptual and practical issues. Nonetheless, an estimate of opportunity cost of the land generally remains the appropriate approach to land valuation for production-cost based price regulation. However, cost-based regulation may not be appropriate where airport capacity is restricted (appendixes F and H).
- *Weighted average cost of capital (WACC)*. WACC estimates the required rate of return to be earned by debt and equity providers. While the debt costs to a firm are relatively straightforward to assess, the required rate of return on equity is not. The capital asset pricing model (CAPM) is widely used. This method requires the measurement of two contentious variables: the beta (a measure of the risk of the firm relative to total market risk) and the market risk premium.

Sources: ACCC (1999c; 2001i); PC (2001a).

Where price caps do not include allowance for investment in the starting prices or the Xs, the cost-based reviews required to assess price increases allowable for individual investments will tend to move price caps closer to a rate-of-return regulation approach.

Another significant potential problem with price caps relates to the need for maintenance and/or improvement of quality. Due to the structure of price caps, there generally is an incentive to run down existing assets and degrade quality. With a price cap in place, a firm may have an incentive to implement cost reductions at the expense of service quality. Thus, price-cap regulation typically is complemented by monitoring of service quality to ensure standards do not deteriorate.

An increase in quality usually requires an increase in labour and/or capital expenditure. However, when the firm is subject to a price cap, it may not be able to recoup all of the extra costs via higher prices. The regulated firm may gain additional revenue from increased sales, but this may or may not be enough to compensate for the extra costs incurred. Thus, price caps normally are complemented by specific provisions to accommodate quality-enhancing investments.

Price caps also may constrain efficient pricing when capacity constraints are being approached. In particular, in the calculation of X values, the costs used are those incurred by the firm, not the costs imposed on others in the form of congestion. Efficient prices are those that would allocate the scarce services to those who value them most highly, not prices determined by costs incurred in operating the airport or even 'opportunity' costs that reflect another (non-airport) use (appendix F).

The ACCC (sub. DR55) observed that airport operators have scope to introduce peak-period pricing by restructuring charges within a price cap. The extent to which price restructuring is able to address excess demand problems will depend partly on the volumes in peak and non-peak periods. If the peak is long and reflects significant excess demand, it is likely that market-clearing prices would generate more revenue than allowed under a production-cost-based price cap. Broadly speaking, the minimum efficient price in off-peak periods would still have to cover the marginal cost of providing aeronautical services at those times. Prior to September 2001, weekday volumes at Sydney Airport reached the 80 movements per hour limit in five peak hours, and flights at these times represented around 40 per cent of daily movements. Introducing peak-period pricing may result in existing shoulder periods also becoming fully utilised.

Finally, price caps, when they are fixed for other than a short term, are not very flexible. If an airport's volumes and/or costs are changing rapidly, adherence to the

price cap may result in inefficient prices. As concluded by the Motor Trades Association of Australia Superannuation Fund (MTAA Super Fund):

> … when the firm is already operating relatively efficiently, demand conditions are changing rapidly and unpredictably or the price cap is applied to preserve low or negative levels of profitability, there is a strong likelihood that the controls and the X factor will cause the firm to set prices that generate worse outcomes than might have arisen without direct prices oversight. (sub. 22, p. 18)

Where outcomes are significantly different from expectations, governments may respond by reviewing the regulatory framework, as occurred following the significant decline in airport traffic volumes in September 2001.

Further, any approach involving regulators establishing prices, carries potential costs associated with the likelihood that the regulator will not establish the efficient price. The possibility of even random departures from efficient pricing in regulatory decisions increases the riskiness of investment. This risk may be further increased by the political attractiveness of lower rather than higher prices, creating a bias towards inefficiently-low regulated prices. The dual role of the ACCC as a regulator and consumer advocate (alluded to by Sydney Airports Corporation Limited (SACL), sub. DR62), increases the possibility of such outcomes. In addition, pricing rules used to implement regulation may limit efficient pricing approaches such as price discrimination.

Forms of price cap

There is a range of options available for the implementation of a price-cap regime. The following discussion covers some of these.

Revenue yield versus tariff basket

In the United Kingdom, regulation of airports uses a 'revenue-yield' approach to price caps (box 10.3) — that is, airport charges are capped by reference to the revenues generated per passenger. The main alternative is the current system used in Australia, which is sometimes referred to as the 'tariff-basket' approach.

Box 10.3 **Tariff-basket and revenue-yield price caps**

In determining the weighted average index for prices, two approaches are common. The current approach used at Australian airports is a 'tariff basket' that uses a weighted sum of prices based on revenue shares in the previous period. The regulated airport is restricted to increasing the weighted sum of prices by no more than the CPI-X factor each period. Within the basket, the airport is able to increase or decrease individual prices for goods or services, as long as they do not violate the weighted sum price cap.

In the United Kingdom and Europe, some airports are subject to a regime referred to as the 'revenue-yield' approach. The price cap is based on a maximum allowable revenue yield per passenger. In the United Kingdom, where airports have been regulated under a single-till regime, the maximum allowable revenue yield per passenger is calculated by dividing total allowable revenue for aeronautical services by the anticipated number of passengers. The airport can then set the prices for aeronautical services so as not to exceed the maximum average revenue yield per passenger. Like the tariff basket approach, prices for individual airport services can be set freely by the airport as long as the average revenue constraint is not exceeded.

Each approach has advantages and disadvantages.

- The revenue-yield approach tends to be more flexible, because there are no constraints on the charges that can be levied, provided the airport adheres to the average revenue constraint. Introducing new charges is also relatively straightforward in the revenue-yield approach, whereas in a tariff basket, prices need to be re-weighted. Given that the weights normally are determined using the previous year's revenue, to implement a new charge, new revenue weights need to be calculated.
- Under a revenue-yield approach, there needs to be a homogeneous common unit of measurement. For UK airports, passengers are used as the unit of comparison. This provides incentives for airports to concentrate on passenger throughput, possibly at the expense of other services.[7]
- The tariff-basket approach provides better incentives to move to efficient pricing. Under the revenue-yield regime, when there is unused capacity, the airport may set prices below incremental cost for some services and recover these costs on other services.
- Under both regimes, as under price caps generally, encouraging appropriate quality is an issue, although there appear to be better incentives under the tariff-

7 If, for example, passengers are the base unit, there is little incentive to attract dedicated freight flights, because revenue yield per passenger will increase and possibly exceed the cap, requiring an offsetting reduction in aeronautical charges.

basket approach, because the revenue-yield approach is focused on a homogeneous unit (typically passengers). The tariff-basket approach has better incentives to provide different levels of service quality, because there is an incentive to price different dimensions of quality according to each service's incremental costs and relevant demands.

The UK regulator, the Civil Aviation Authority (CAA 2001c) concluded, after consideration of the advantages and disadvantages of the two approaches, that the tariff-basket approach should replace revenue yield at Heathrow and Gatwick airports. According to the CAA, the tariff-basket approach provided a 'good basis' for the proposed default price cap (see below) because, in particular, it avoided the dilution problems associated with the revenue-yield approach.[8] However, it proposed maintaining the revenue-yield approach at Stansted and Manchester airports, which are less congested.

Default price cap and service quality

Under a default price cap, an airport would be required to provide a specified level of service at a given (or maximum) price. For any services beyond this standard, each airline would have to negotiate directly with each airport. The extra services could be separate services or services of a higher quality. This process has the potential to encourage commercial negotiation between individual airports and individual airlines, and targets regulation at the core services required by airlines. The CAA noted that:

> … a mechanism [default price cap] that facilitated greater direct contracting between users and the airports could have significant benefits in terms of better use of existing airport facilities, and in providing better incentives to ensure that the airport invests in new facilities that users want. (CAA 2001c, p. 185)

The CAA (2001c) proposed that a default price cap be implemented at Heathrow and Gatwick airports where there is evidence of significant excess demand and price caps are likely to be tightly binding. Separate service contracts to provide service 'top ups' or 'top downs' need not be treated as airport charges, so could be made outside the price cap. The CAA also proposed that within the proposed price cap there should be a term reflecting airport quality of service, based on a weighted basket of quality attributes.

A default price cap and an adjustment for quality were considered to be unnecessary for Stansted and Manchester airports. It was considered that at these airports, which

8 If a contract is entered into at prices lower than the default cap, then unless an adjustment is made, the airport could increase prices to those users remaining in the default price cap (CAA 2001c).

have excess capacity, the price cap would not be binding and therefore would not act as a key driver of airport incentives to invest in additional capacity or to enter into contracts between the airport and users.

Nonetheless, as the CAA conceded, the derivation of a quality term (or several) for each UK airport is difficult. Numerous policy decisions are required, including in relation to:

- the quality attributes to make up the basket;
- the 'par value' for each quality attribute in the basket;
- the relative weighting of each quality attribute; and
- the valuation of each quality attribute (in each period) (CAA 2001c).

In this regard, the CAA commented that:

> … as there are more dangers in mis-specifying and measuring outputs and thereby creating undesirable distortions, the proposal is that the service quality dimension of the price cap should be relatively modest … but set within a framework that allows greater weight to be placed on them as information systems become more robust, including concerning costs and benefits. (CAA 2001c, p. 246)

The inclusion of a similar quality term in price caps at Australian airports would be no less complex and has the potential to amplify the risk of regulatory error already inherent in setting price caps. In any event, Australia faces a somewhat different set of circumstances from those of the United Kingdom, in that domestic terminals in Australia are mainly operated under long-term leases by the major domestic airlines. This precludes some of the potential for quality differentiation in the delivery of airport services by the airport; the level of the provision of services associated with runways, and aprons, is largely non-discretionary. The use of services, such as aerobridges, and international and domestic common-user terminals, may be somewhat more discretionary, with airlines demanding various levels of service.

It also is likely that there would be major disagreements between airports and airlines as to whether a particular level of service corresponded to the level specified under the default cap. Westralia Airports Corporation concurred, noting that the default price cap:

> … would be impracticable. The level of service requirement is difficult to specify and may differ between users. It's also very hard to measure, and it does depend at an airport on the level of service provided by third parties. (trans., p. 566)

Demand-based variation

At Hamburg Airport, the price cap is designed to share increases in profits due to exceptional passenger growth. Within a dual-till regime, the X factor is adjusted according to a sliding scale based on passenger growth. If this growth exceeds 3 per cent then, for every extra 1 per cent growth, there is an increase in the X factor by 0.5 per cent. (There is no provision for X to fall if passenger throughput falls short of forecast levels.) This sharing of the extra revenue with consumers is based on the premise that the extra profitability of the airport is highly correlated with passenger growth, reflecting non-aeronautical revenues and/or lower unit costs.

Yardstick regulation/benchmarking

Benchmarking or yardstick regulation attempts to separate the regulated firm's price structure from its own reported costs. This is done through a benchmarking exercise which may use a variety of econometric and mathematical programming techniques.

Benchmarks can be used within a price-cap regulatory regime for various tasks. These include assessing the efficient cost structure of the firm to determine the level of prices and assessing the value of equity in the determination of the cost of capital. In setting or resetting the X factor, it is common to benchmark future productivity gains against past productivity gains within an industry. As well, benchmarking is used to assess quality performance and commonly is used within the firm (rather than by the regulator) to assess the firm's performance across a range of activities.

The aim of benchmarking under a price-cap regime is to improve the incentives for a firm by reducing the regulator's reliance on the firm's own costs to set the price-cap parameters. This could provide incentives for cost efficiencies and to invest appropriately.

Problems of benchmarking

A range of problems, both theoretical and practical, hinders the implementation of yardstick regulation. As noted above, in practice it is very difficult to ignore completely the cost base of the individual firm in setting the price parameters. The costs of setting incorrect prices can be very high. If prices are set too low, then there is the threat of bankruptcy or at least under-provision and under-investment and, if prices are set too high, the firm will reap windfall profits.

As Professor Forsyth stated:

> The alternative to cost-based regulation is yardstick or benchmark regulation. You often find references to this and how it's desirable but regulators always avoid it. They avoid it simply because it's risky from the firm's perspective and therefore from their perspective. Regulators can be punished if an industry is too profitable — and one can quote various examples of that. So the safe thing for a regulator to do is to rely heavily on cost and not too much on benchmarks. So there's a real problem of getting benchmark regulation accepted if that's what's wanted. (trans., pp. 60–1)

The unreliability of benchmarking is due to the difficulty in achieving comparability across firms. The conditions under which firms operate vary and each firm will face different demand structures. Thus each firm may provide a different mix of services and different levels of quality. Yardstick regulation requires that firms are homogeneous or that differences are easily identifiable. If this requirement is not met, a series of judgements needs to be made by the regulator. Australian Airports (Townsville) did not consider that:

> … it is possible to determine an appropriate benchmark due to wide disparity in demand for, and quality of, services amongst airports. (sub. 14, p. 31)

Application of benchmarking methods, such as data envelopment analysis (DEA), is becoming more sophisticated. However, even if there were an ideal measurement method, it would remain difficult to differentiate between efficiency and other sources of cost differences. Thus, it is difficult to ignore the firm's own cost structure in setting prices — a point confirmed in a decision in the Victorian Supreme Court (May 2001) regarding the resetting of price caps in the electricity distribution industry (Supreme Court of Victoria 2001; NERA 2001a).

Because there is no objective method for choosing the explanatory variables or for allocating unexplained cost differences, the benchmarking process requires arbitrary judgements at crucial points. This leads to an increase in the level of uncertainty and increases the risk to the firm, which in turn may also raise its cost of capital.

10.2 Future regulation: price caps and Australian airports

Airport participants in this inquiry generally expressed a preference for no airport-specific regulation or at least less intrusive regulation — with price caps being their preferred alternative if that were not accepted. Melbourne Airport recommended limited regulation but, if explicit regulation were to proceed, suggested a 'tariff-

basket style price cap' (sub. 7, p. 58). However, the first preference of Australian Airports (Townsville) was:[9]

> A broad CPI based price cap set for some airport services prices with scope for pricing reviews for new investment or other special circumstances and no other prices surveillance or monitoring. (sub. 14, p. 3)

The airlines (and their representatives) have proposed a range of regulatory options, though generally advocating stricter price regulation than supported by the airports. Virgin Blue proposed that 'the CPI-X price cap should be applied to all aeronautical services' (sub. 30, p. 25). The Board of Airline Representatives of Australia (BARA) (sub. 41 and trans., pp. 532–3) suggested rate-of-return regulation as one sensible regulatory option for airports:

> In BARA's view, an effective, simple and relatively efficient approach to regulating the price of airport services is rate of return regulation over each airport as a whole. (sub. 41, p. 53)

One of the main features of this option would be that:

> … the airport would be able to set prices across all airport services with complete freedom, so long as the overall allowable rate of return is not breached. (sub. 41, p. 53)

In assessing future regulatory options, the Commission is required to take into account the regulatory principles referred to in the terms of reference, cited at the beginning of this report and in chapter 4. For example, regulation should promote efficiency and encourage commercially-negotiated outcomes, and target those aeronautical services and airports where the airport operators have the most potential to abuse market power.

BARA's option for consideration — rate-of-return regulation across the whole range of an airport's services — ignores the widely-acknowledged problems of this form of regulation discussed earlier. In particular, if implemented, their proposal would regulate returns in areas where airports held little, if any, market power. (This is discussed further in section 10.3 in the context of the single/dual-till issue.)

As discussed above, there are several possible price-cap models as well as a number of issues and options that need to be canvassed. These include the inter-related issues of the starting prices, the resetting of X factors and the treatment of new investment. In addition, the coverage of the price cap needs to be examined, along with whether further modifications to the price cap are required to allow for congestion pricing. The efficiency, incentive and compliance effects of each of these options are also discussed.

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9 Australian Airports (Townsville) considers that the balance of market power (at least for regional airports) lies with the airlines and considers that regulation is required for this reason.

There seems no reason to prefer the use of a revenue-yield approach over the existing tariff-basket approach to a price cap, particularly if incentives to invest are considered to be appropriate. It also is clear that yardstick regulation cannot be relied upon fully to supplant direct analysis of the costs of the firm. Benchmarking could be one component of price regulation but ultimately firm-specific costs also will need to be taken into account. Benchmarking has its place in comparing the performance of airports to both airports within Australia and overseas. It could also be used when establishing maximum prices between the resettings of the cap. As well, the terms of reference for this inquiry state that price regulation should facilitate benchmarking comparisons of airports.

The default price cap raises the issue of the appropriate specification of regulated services. Although the default price cap has attractive theoretical underpinnings, the derivation of a quality term that does not distort incentives is likely to be difficult and complex. The users of aeronautical services will have different base requirements, the minimum requirement will differ across airports, and disputes are likely as to whether minimum specified standards are being met. In practice, effective implementation of a default price cap may not be feasible.

Starting prices, X values and treatment of investment

As discussed above, price-cap regulation generally requires regular reference to actual costs of providing the regulated services. If this is not done, then prices could move away from efficient levels (either too high or too low) with associated adverse effects. Therefore a fundamental issue in designing price caps is to attempt to ensure, at least over time, that prices roughly converge to their efficient levels. In particular, to promote dynamic efficiency, price caps should be designed to provide incentives for efficient investment.

In a competitive market, any new investment will be subject to a straightforward cost–benefit analysis to determine whether the investment is viable at expected prices, demand and costs. With regulated firms, the process is reversed. The need for investment is determined by reference to expected future market conditions, and the price that is needed to justify the project is then determined.

While an airport with market power may have some incentives to under-invest (chapter 7), price caps introduce a different set of incentives and potential distortions. As observed by Professor Forsyth:

> Price-caps are a simple form of control, but they open up many subsidiary problems. Further, quite detailed regulation is needed to address quality degradation problems and investment matters. (sub. 5, p. 35)

There are four broad types of investment that need to be considered: cost saving; replacement/maintenance; capacity enhancing; and quality enhancing. In practice, more than one of these attributes is likely to be associated with a particular investment project.

Cost-saving investment

Cost-saving investment typically reduces the cost of operating and/or maintaining current assets. Under price-cap regulation, airports have an incentive to embrace cost-saving investment because they can retain profits, at least for the term of the regulatory period. Thus, there should be no need for additional incentives for the airports to undertake this type of investment, provided the airport can retain at least some of the savings.

Replacement/maintenance investment

This is investment that is aimed at preserving the service potential of an existing asset. It is also the area that has caused considerable contention in applying the necessary new investment (NNI) arrangements (chapter 8). If regulated prices are broadly adequate for long-term supply of the airport service, then:

> To the extent that this investment represents the most efficient means of maintaining without enhancement existing service potential, it is most appropriate to treat such investments as though they were a form of maintenance expenditure.
>
> Given the neutral impact on both costs and revenues over time from planned like-for-like cyclic renewal of assets, investments with a maintenance purpose should be included within the price cap. These would provide no basis for modifying the price cap parameters. (Network Economics Consulting Group (NECG), quoted in ACCC, sub. 36, p. 101)

In other words, if prices are set at an efficient level, then replacement of existing capital can be expected to proceed, because it would be commercially viable. As stated by SACL:

> The reason that an NNI arrangement is required is that existing prices are below incremental cost. If prices approximated incremental cost, new investment could be funded from expected increased revenues from the volume growth, rather than unit price increases. (sub. 27, p. 12)

Capacity-enhancing investment

Capacity-enhancing investment typically allows for traffic growth over time. If the increase in capacity increases revenue, the less the requirement for additional cost

pass-through under a price cap to provide appropriate incentives. As pointed out by Professor Forsyth:

> When extra capacity enables extra traffic to be handled, revenues will increase. There is no general reason why the price of using the airport should increase as its traffic expands … (sub. 5, p. 26)

And the MTAA Super Fund noted that:

> Moreover, although a price capped firm is unable to raise prices as demand expanded, it would still have an incentive efficiently to invest to expand capacity as long as regulated prices gave a sufficient margin over operating costs. (sub. 22, p. 53)

However, if regulated prices are such that an airport currently is making a loss on the provision of a service, then there is no incentive for the airport to increase capacity — it will just lose more.[10]

Quality-enhancing investment

Quality-enhancing investment increases the level of quality for a given service (for example, an upgrade of terminal facilities). Under a price cap, an airport is unlikely to be able to capture the extra benefits from a quality-enhancing investment, unless the quality improvement encourages spending on services outside the cap or increases demand for the airport's services. It is likely that extra incentives, probably an increase in prices, will be required to encourage this type of investment by airport operators.

Where the benefits of such investment are likely to accrue to existing airlines, their involvement in the approval process may be appropriate. However, airlines can have divergent quality requirements. Even if existing airlines benefit, they may oppose a quality improvement that would facilitate new entry.

As noted above, in practice it may be very difficult to differentiate between types of investment, including capacity- and quality-enhancing investments. Because of the lumpiness of most airport investment, capacity-enhancing investment typically will result in higher quality, at least in the short term. For example, duplicating a runway will (among other outcomes) reduce the time delays for existing flights, which translates into a better service for the passenger.

10 Unless: (a) the airport expects a very large increase in demand such that unit costs fall; (b) costs fall over all output ranges due to technological improvements; or (c) extra capacity encourages additional spending on services outside the price cap.

Alternative price-cap treatment of investment

Apart from cost-saving investment, which the price-capped firm always will have an incentive to undertake (because it can retain the benefits within a period), the incentives to undertake the remaining types of investment depend crucially on the detailed design of the price cap. The treatment of investment within a price cap is inter-related with the starting prices for the regulated services and how the Xs are set. Thus, for example, if there were no cost pass-through provisions for any investment, then the starting prices and Xs would have to be set to accommodate all future investment.

Figure 10.1 sets out three possible approaches to implementing price caps — each of which, in principle, would provide for efficient investments and prices, at least over time. These three approaches are not exhaustive; for example, the situation in which starting prices are above levels required to provide for all investment is not shown. In such a case there would be no need for provisions for the pass-through of investment, while the X values could be made sufficiently large to drive prices to their efficient levels over time.

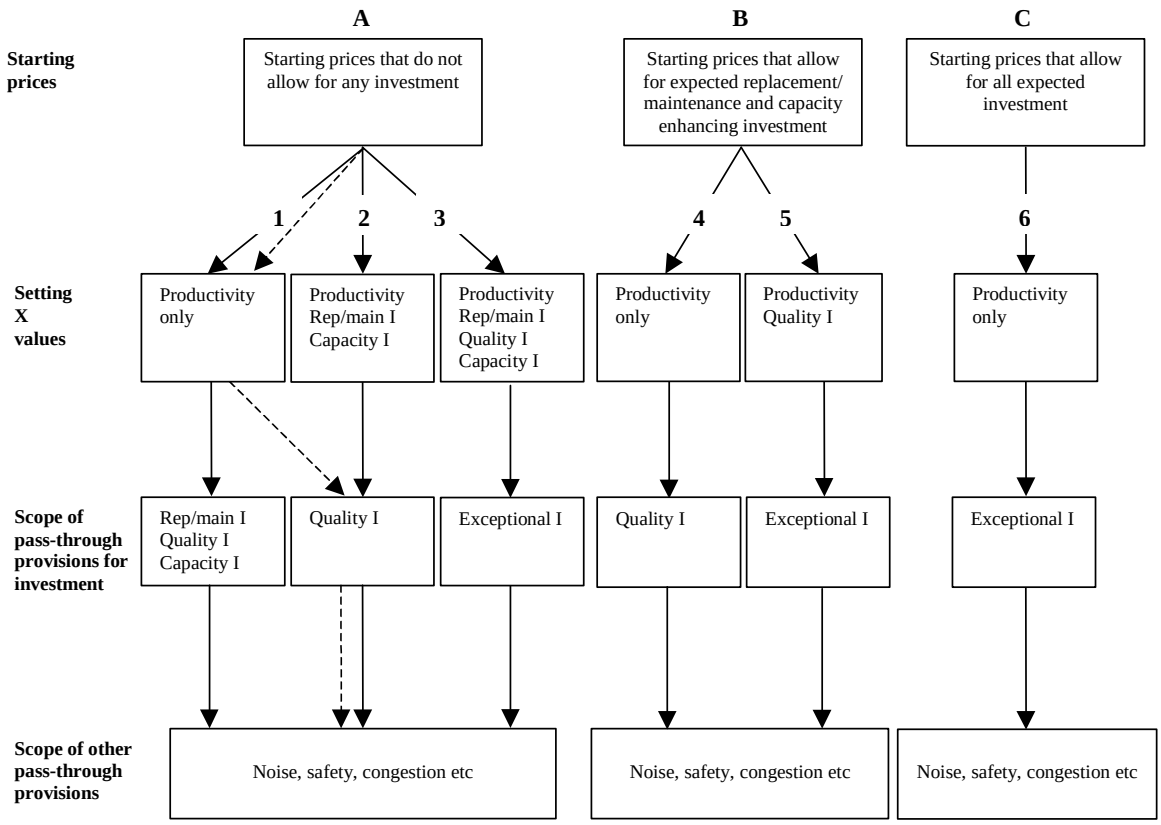
The three interdependent decision variables listed down the left-hand side of figure 10.1 are:

- starting prices;
- the setting of X values; and
- the scope of investment cost pass-through provisions.

The fourth (bottom) row represents other possible pass-through provisions for costs outside the airport's control — for example, noise levies, and mandated safety and security provisions.

Three approaches to price caps are outlined, differentiated by starting prices. Approach A assumes starting prices are at a level below that required to justify any efficient investment (except cost-saving investment). The analysis in chapter 8 suggests that this was the situation at a number of core-regulated airports when privatisation occurred. Under approaches B and C, starting prices are set at a level that is considered adequate for encouraging efficient replacement/maintenance and capacity-enhancing investment over the regulatory period. Approaches B and C differ in their treatment of quality-enhancing investment.

Figure 10.1 **Price-cap approaches**



Rep Replacement. **Main** Maintenance. **I** Investment.

The solid arrows within each of the three approaches represent six feasible paths, given the starting price decision, that could, in principle, deliver efficient pricing and investment outcomes. (The path illustrated by the dashed line is discussed later.)

If starting prices are below the levels required to cover any expected investment, then there is likely to be a need to allow price adjustments for capacity-enhancing and replacement/maintenance investment as well as for quality-enhancing investment. All paths (1, 2 and 3) in approach A allow for anticipated productivity growth to be incorporated in the X factor. However, the calculation of the X values differs across the three paths with respect to the types of investment incorporated. In path 1, the X values incorporate expected productivity improvements only, whereas path 2 X values incorporate an allowance for replacement/maintenance and capacity-enhancing investment as well as an allowance for productivity growth. In path 3, the X values incorporate all of the investment and expected productivity gains incorporated in path 2, as well as an allowance for quality-enhancing investment.

The Xs in paths 4, 5 and 6 incorporate an adjustment for anticipated productivity gain. However, starting prices are at levels adequate for replacement/maintenance and capacity-enhancing investment. Hence, paths 4, 5 and 6 differ only in their treatment of quality-enhancing investment. In path 4, the X values incorporate expected productivity improvements only. In path 5, quality-enhancing investment is incorporated into the X values, whereas in path 6 it is incorporated into the starting prices.

Given decisions about setting starting prices and Xs, each of the paths requires varying scope for the pass-through of investment costs. Path 1 allows for all investment costs (except cost-saving investment) to be to passed through, whereas under paths 2 and 4, only the costs of quality-enhancing investment can be passed through. Under paths 3, 5 and 6 there is no need for ongoing investment assessment (as investment is incorporated in the starting prices or Xs), but there is a need, in exceptional circumstances, to allow for variations in cost pass-throughs provided for investment.[11] This will cover situations unforeseeable at the time the Xs are set. (Where there is provision for assessment of investment on a continuing basis (paths 1, 2 and 4), there is no need for such an 'escape' clause.)

While, in principle, each of approaches A, B and C can provide efficient outcomes, they:

- require different levels of regulatory involvement (at different times);
- provide a range of incentives for strategic behaviour and commercial negotiation by the parties;
- have different effects on the time paths of prices; and
- have different effects on investment incentives.

Advantages and disadvantages of different approaches and paths

Approach A has the immediate appeal of administrative simplicity in that there is no need to engage in the lengthy and complicated process of estimating appropriate prices (based on an airport-wide cost assessment) that would cover all expected investment (box 10.2) or, alternatively, to use a benchmark to set prices. Price caps were developed to reduce the disincentives of tightly linking regulation of prices to the assessment of a firm's costs. However, as noted above, prices eventually need to

11 Exceptional circumstances for investment may include situations requiring unexpected investment, or the delay or cancellation of investment that has been allowed for in the cap. These could be due to a significant change in demand — such as experienced by Brisbane Airport following the Asian economic crisis or by all airports after the events of September 2001 — or a radical improvement in technology that affects costs significantly.

converge towards efficient long-run levels. Thus, if starting prices are not at efficient levels, then other adjustments eventually will be needed.

Path 1 is the easiest path to implement at the start of the regulatory period. Prices are carried forward and only expected productivity improvements need be calculated. However, this ostensible simplicity is counteracted by the need for an ongoing examination of every proposed investment (excluding cost-saving investment). This assessment is likely to be complicated by the uncertainty surrounding the existing price levels. To determine the amount of adjustment to the prices for aeronautical services, the appropriateness of each investment will need to be determined, as well as a dollar value for all the investments. Then there will need to be an assessment of whether current prices will sustain these investments; if not, an upward adjustment of prices will be required.

Some other aspects of path 1 are appealing. As discussed in chapter 8, the process of cost pass-through can provide an opportunity for consultation between users and the airport, possibly with a view to commercially-negotiated outcomes rather than regulated ones (box 10.4). Also, the need for assessment of investment proposals by the regulator occurs only when the investment proposal is submitted, therefore avoiding the information problems and risks associated with planning investment several years ahead.

A significant disadvantage of adjusting prices as new investment comes on line is that it can be administratively complex and costly for all parties involved. Under the current regime, this complexity has been exacerbated by the need to apply for approval of very small investment projects if a price increase is sought (chapter 8). As the ACCC stated:

> So far the Commission has received dozens of applications for new investment proposals, including for small items such as drainage works, baggage room fans, installation of doors to passenger terminals and revegetation works. The process imposes administrative costs on the airport operator, airport users and the regulator and in some cases may delay the investment works. (sub. 36, pp. 105–6)

On this point Qantas Airways agreed with the ACCC that:

> … continuous new investment applications to the ACCC are administratively inefficient. (sub. 48, p. 22)

In addition, incumbent airlines may have an incentive to frustrate new entrants by delaying capacity-enhancing investments and could use new investment approval procedures to achieve this delay (chapter 8). As stated by Impulse:

> It is our belief that the current regime is not working as appropriate levels of infrastructure development since the entrance of new competitors such as Impulse has not occurred. (sub. 18, p. 3)

Box 10.4 **Project control groups**

User support and the encouragement of commercial negotiation is an important aspect of a regulatory regime. Given that there are a relatively small number of large users (the airlines), negotiation with individual airports is feasible. Brisbane Airport has established project control groups, comprising airport and airline representatives, to assess a range of investment proposals. This process has been established voluntarily, although user support is one of the criteria that the ACCC uses to guide its assessment of investment proposals. The process generally appears to have been successful. However, with Brisbane's 2000 investment proposal, there was disagreement between the airport and the airlines on whether three proposed projects were appropriately considered 'necessary new investment' (NNI).

NECG, as consultants to the ACCC, (sub. 36, attachment D) raised some issues concerning formalisation of this process within a price-cap regime, including the behaviour of the users and the potential for strategic behaviour within the control group. This behaviour includes:

- cheap riding — where one of the parties to the agreement understates the value (to it) of the project being considered;
- forced riding — where larger airlines may force through an investment that causes disproportionate costs on a smaller airline; and
- barriers to airline entry — where large incumbent airlines may vote against entry-facilitating investment.

Source: ACCC (sub. 36, attachment D).

Paths 2 and 3 (approach A) again have low starting prices but require some assessment of investment at the beginning of the regulatory period for incorporation into the X values. Path 2 will require a relatively high level of regulatory involvement because investment needs must be assessed in setting the X factors as well as on a continuing basis. Also, there will need to be a distinction made between replacement/maintenance, capacity-enhancing and quality-enhancing investment. In practice, this could be a very difficult and, at times, arbitrary determination.

Under path 3, all foreseeable investment is included in the X factors. There is no need to differentiate between types of investment. However, the investment requirements for the regulatory period will have to be forecast by the airport (and users) and assessed by the regulator. These process will require detailed information on expected future costs and demand growth during the regulatory period. Except for unforeseeable circumstances, new investment will have been set for the regulatory period.

Path 3 shares characteristics with paths 5 and 6 in that all investment must be assessed at the beginning of the regulatory period. Approaches B and C are

characterised by the setting of the initial prices at levels adequate for the specified investment. Compared with paths 1, 2 and 4, the ongoing information requirements for paths 3, 5 and 6 are reduced — though there remains the substantial task of determining the initial efficient price levels and Xs for aeronautical services. Major elements of such an exercise are outlined in box 10.2.

Under the system in the United Kingdom, prices are reset every five years based on a review of expected costs and demand. New investment over the regulatory period is estimated and incorporated into the anticipated costs after a consultation process with the industry. This system is similar to paths 3, 5 and 6, as *all* investment is incorporated in the starting prices or the X values at the start of the regulatory period. Although the UK approach has been to accept airport investment proposals with minimal regulatory assessment, the potential always remains for intense regulatory involvement in the investment decision-making process during price-cap reviews.

The longer the price-cap period, the more difficult it is to predict the level and cost of required investment. In addition, airports may have an incentive to overstate investment requirements, to procure excessive up-front price increases, while airlines may be tempted to understate their forward investment requirements to achieve lower charges.[12] Once an investment program is approved, there is an incentive for airport operators to delay the investment process, because pricing parameters have been fixed for the regulatory period. Hence, the regulator must ensure the integrity of the investment plan by monitoring during the regulatory period. These tendencies, and other failures of the process, have led the CAA (2000e) to request feedback from airports and airlines on ways to 'incentivise' investment.

The potential inflexibility in the forward-looking approach would need to be addressed. If, for example, after privatisation charges at Australian core-regulated airports had been established based on a forward investment plan, then some unanticipated new investment — such as the domestic common-user terminal at Melbourne Airport — might have been frustrated. Conversely, unexpected falls in demand may require the deferral of planned investments, as has occurred with the Adelaide Airport multi-user terminal. An escape clause for both the regulator and the airport would be advisable to accommodate unforeseen events that have major ramifications for airport investment.

[12] Such an approach would only be beneficial to airlines if they are still able to achieve their desired airport investment profile in spite of airport charges being set too low.

Alternative paths?

The ACCC suggested several price-cap approaches (sub. 36). Essentially, all would carry forward price levels from the current regulatory regime (approach A).[13] However, the proposed approaches are unclear with respect to replacement/maintenance and capacity-enhancing investment. The ACCC (sub. 36) referred to its preferred option as a 'hybrid' approach. This would allow only pass-through (upward adjustment of prices within the regulatory period) of the costs of investment for major projects. Again, starting prices would be kept at the level applying at the end of the current price cap; alternatively, an initial minor adjustment could be made for expected small new investments.

If starting prices were not adjusted for smaller investment projects these would be funded through adjustments to the Xs. The ACCC recommended that the distinction between small and large investment be based on an (unspecified) dollar value. It recognised that 'the 'X' values should be consistent with the approach adopted in relation to new investment' (sub. 36, p. 110).

Another categorisation for the distinction between investment in the ACCC's hybrid approach is 'developments that could not be anticipated at the time the 'X' values were set' (sub. 36, p. 107). This suggestion is somewhat similar to path 6, *if* prices were set at the appropriate level at the start of the regulatory review period. If the prices are not set in this way, then the process would proceed on a similar basis to paths 3 or 5, in that all foreseeable investment would be assessed at the beginning of the regulatory period and prices (including Xs) would be adjusted to accommodate the expected investment program.

If there were no provision made for replacement/maintenance and/or capacity-enhancing investment in the X values (and starting prices were not adequate for such investments), then efficient pricing would not be achievable. For example, even in principle, the path represented by the dashed line in approach A (figure 10.1) cannot promote an efficient outcome (in the sense of aeronautical revenue covering stand-alone aeronautical costs). With starting prices too low to cover investment and without specific provision for replacement/maintenance and capacity-enhancing investment, airports' ability to invest in replacement/maintenance or capacity investment could be impaired (unless the investment were funded from non-aeronautical revenue).

13 The ACCC considered that an allowance for smaller new investments could be factored in either through adjustment to the X factors or starting point prices.

The ACCC indicated that its hybrid approach would allow higher prices to recover the costs of projects that would qualify as major development projects under the *Airports Act 1996*.

> The pass through provisions should not distinguish between 'replacement' and 'new' investments. In other words the pass through provisions should be available for investments irrespective of whether they replace existing assets or add to capacity or quality. (sub. DR55, p. 17)

With the aim of lessening regulatory costs, the ACCC hybrid approach would allow for smaller new investment (but presumably not replacement investment) being included in the X values or in the starting point prices. The difference between the two alternatives is a matter of the timing of the effect on allowable prices of such investment over the regulatory period. If small new investments are included in the starting prices, there will be a relatively small initial price increase, whereas including them in the Xs will lead to each annual price change being marginally higher than otherwise.

Over time, as more aeronautical infrastructure is replaced, prices under the hybrid approach will tend to increase towards those necessary to cover aeronautical costs (including appropriate returns on assets).[14] The ACCC's argument for the extension of cost pass-through to major *replacement* investment, which is excluded under the current framework, would seem to indicate a recognition that current aeronautical prices under the price cap may not be sufficient to justify replacement investment. The ACCC (sub. 36) observed that current prices were unlikely to reflect aeronautical costs. Its apparent reluctance for starting prices to be reset to the levels needed to cover such investment (at least at the beginning of a new regulatory period) appears to reflect a concern that a rise in prices would deliver windfall gains to airport operators. The ACCC explained that:

> Introducing new CPI-X price caps for regulated airports raises the question of how to set starting point prices and the 'X' values. The Commission [ACCC] proposes that prices from the current regulatory framework should be carried over to form the starting point for a new price cap. The alternatives, such as setting starting point prices to reflect costs, are likely to result in significant increases or decreases in charges. Given that these starting point prices relate to existing, mostly sunk assets, there is little if any reason to make such a change from an economic efficiency perspective. Instead the main effect of such a change would be a distributional one, either a transfer from airlines and their passengers to airport operators or vice versa. (sub. 36, p. 10)

14 If the starting prices already include some returns to capital, then allowing price increases for replacement investment could eventually lead to prices overshooting efficient levels. The price increase allowed would need to be tempered by the depreciation and returns on existing assets already contained in the starting prices.

The scope for windfall gains (or losses) would, however, depend on the expectations of bidders regarding aeronautical price regulation (including NNI pass-through provisions) at the time of bidding. As discussed in chapter 8, bidders might have had some grounds for expecting regulated outcomes different from those that transpired. Moreover, the price-cap regime was locked in for five years only and described as a transitional regime. Bidders also were informed that single-till pricing would not be mandated (DoTRD 1996) and yet this approach remains incorporated to a substantial degree in current prices courtesy of the Federal Airports Corporation charges used as the starting prices for the post-privatisation regime. The Government's commitment to a dual-till approach to establishing *maximum* regulated prices was confirmed in its direction to the ACCC regarding treatment of non-aeronautical revenue in the assessment of SACL's pricing proposal (Direction No. 22).

Though a price-cap approach that perpetuates existing prices, with appropriate adjustments for investment as the need arises, has some attractive features (including that prices adjust slowly and that there is scope for consultation between the parties about investment proposals), such a model, for reasons outlined above, may encourage strategic behaviour, particularly by airport users, that frustrates appropriate investment. It also may be administratively costly and protracted.

The ACCC is correct in observing that failure to provide sufficient returns on sunk airport assets is likely to have limited efficiency effects, at least in the short term. This is so for any industry with excess capacity. However, regulators have recognised that longer-term considerations make short-run marginal-cost pricing — the logical conclusion of the ACCC's sunk costs argument — inappropriate on efficiency grounds. In its decision on Sydney Airport, the ACCC (2001i) took a longer-term view and allowed prices to rise to a level that provided returns on sunk assets.

The Commission considers that setting starting prices for any new price cap to reflect efficient long-run aeronautical costs offers a superior approach that would reduce ongoing regulatory involvement with its associated costs and risk of error. The CAA has made a preliminary proposal to rebase price caps for a number of UK airports and observed that:

> While the regulatory system would allow the incremental returns from additional investments to cover their incremental costs eventually, it provides poor signals for the airports and users as to the real costs and benefits of delivering additional outputs. (CAA 2001c, p. xvii)

Where rebasing price caps would involve significant increases in aeronautical prices, adopting a gradual path to the appropriate level is an option. Indeed some airports suggested that this is the approach they would adopt.

Whichever price-cap approach is selected, it needs to be implemented in a way that clearly and transparently sets out how appropriate investment will be accommodated, and it should set prices that will encourage appropriate investment.

Implementation

A price cap could be implemented under the:

- *Prices Surveillance Act 1983* (PS Act);
- *Trade Practices Act 1974* (TP Act); or
- *Airports Act 1996*.

The current price-cap regime is administered under the PS Act (chapter 3). In its review of that Act, the Productivity Commission (PC 2001c) has proposed that the Act be repealed. A CPI-X price cap could be administered within the TP Act either via generic provisions (under Part IIIA as an industry code, for example) or an industry-specific provision. Industry-specific provisions also could be placed in the Airports Act, with the ACCC appointed to administer the cap.

Given that price-cap regulation concerns the competitive conduct of airports, its inclusion within the TP Act rather than the Airports Act would seem desirable if the PS Act were repealed. The Commission also considers that any price-cap regime for airports should be implemented as an industry-specific amendment to the TP Act (as for telecommunications (PC 2001d)).

Summary

In theory, price caps can be devised that could, at least over time, deliver efficient prices and investment. The important questions are the likelihood of achieving such a result in practice, and the direct and indirect costs involved in implementing the regime. The various approaches outlined require different levels of regulatory intervention and provide for different opportunities for commercial negotiation and strategic behaviour by the parties. Major trade-offs relate to the level of ongoing assessment of investment proposals and the time over which any adjustment needed to bring prices to efficient levels are made.

The scope for game-playing is likely to be reduced if it is made clear to all parties which price-cap approach has been chosen and, therefore, how different types of investment will be accommodated. Nonetheless, the risk of regulatory error remains, as does the almost inevitable convergence of price caps towards cost-based

regulation and the substantial informational requirement and poor incentives for efficiency inherent in that form of regulation.

In particular, because firms always possess more knowledge about the firm and its markets than possessed by the regulator (information asymmetry), the firm generally is in the best position to determine future cost structures, demand forecasts and many other important facets of its business. It is difficult for a regulator without this detailed knowledge to determine appropriate prices and investment. For some airports, the importance of, and inherent problems in, valuing airport land make regulatory determination of efficient airport prices particularly difficult (appendix F).

Given this limited information and the resultant likelihood of regulatory error, pricing rules applied by regulators can have an adverse impact on investment in essential infrastructure. While firms will make investments based on an expected probability distribution of returns, the common objective that regulated prices should provide a firm with the market average rate of return, on average, will result in below average returns. While the regulated price aims to preclude excessive returns, if market conditions generate below normal returns, the firm is not adequately compensated.

As noted in the Commission's review of the National Access Regime (PC 2001a), the result of setting prices too low is likely to be a failure to invest. This is particularly so where there is lumpy investment with decreasing costs in which case the investment may not be undertaken if the regulated price is set too low. Hence the resultant costs to the community of inefficiently low regulated prices are expected to be significantly greater than the costs that would flow from regulated prices being set a little too high. The CAA (2001c) also noted the significant distortions of imposing a regulated price that is too low and consequently argues for a price cap slightly higher than the regulator's best guess of efficient prices.

FINDING 10.1

Incentive regulation has some advantages over cost-based regulation. However, given the tendency of price caps to converge towards cost-based regulation (with associated high levels of regulatory involvement and risks of regulatory error, and the consequences of these for investment and long-term provision of services), price-cap regulation should be implemented only when there is clear evidence that, without such regulation, economic efficiency would be seriously impaired.

Where price caps are implemented, the approach adopted for investment should be spelled out clearly and transparently to all relevant parties from the outset, in order to reduce the risk of inefficient outcomes and excessive gaming.

10.3 Coverage of price caps and cost-based regulation

A crucial issue in implementing rate-of-return or incentive regulation for airports is determining which services should be regulated. There are three broad options:

- regulate the prices of all services provided by (or at) the airport;
- regulate prices of only those services in which the airport has market power; or
- regulate prices of only those aeronautical services in which the airport has market power.

The terms of reference for this inquiry set out several principles to guide future price regulation, including that 'future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power' (in essence, the last option above). Moreover, core-regulated airports were privatised on the basis that a single till would not be mandated (DoTRD 1996) and the Government issued a Direction (No. 22) to this effect in relation to Sydney Airport in April 2001. Nonetheless, several participants argued in favour of broader application of price regulation on efficiency grounds. These arguments are assessed here and in more detail in appendix C.

Rate-of-return regulation across all airport activities

As one option for regulation of airports, BARA (sub. 41) suggested imposing rate-of-return regulation across the entire range of services provided by airports (but not for individual services). The rationale for regulating all airport services is that, for a decreasing cost, multi-product monopoly to cover its fixed costs, while minimising efficiency losses of pricing above marginal cost, prices should be set such that markets with relatively inelastic demand bear a greater share of fixed and common costs than do markets with more elastic demand (Ramsey pricing). In principle, rate-of-return regulation applied across the entire range of airport services would encourage such pricing. It also has the practical advantage of not requiring cost allocation across various services.

While this model may be appropriate if firms have market power in all the services they provide, if profits arise from locational advantages rather than market power, then rate-of-return regulation could have undesirable consequences. As discussed below, if an airport operator were regulated such that additional rents earned could not be retained, the incentive to earn such rents would be removed. This could mean that airport land was not used in the most efficient way. Therefore, rate-of-return regulation may not bring about lower aeronautical prices. Rate-of-return regulation also is likely to introduce incentives for the airport to allow costs to increase across the whole range of airport activities (section 10.1).

Single-till price-cap regulation

Single-till price-cap regulation, whereby a price cap is imposed only on aeronautical activities, but where the setting of the price cap takes into account some or all profits earned in non-aeronautical activities, is a variation on the theme of rate-of-return regulation of all airport services. The major difference is that the single-till price-cap model effectively forces cross subsidisation of aeronautical activities from any above-normal non-aeronautical profits, and provides some incentives for cost minimisation in the provision of non-aeronautical and aeronautical activities, at least during the period of the price cap.

One argument put for a single till is that profits from non-aeronautical activities may reflect market power rather than locational rents. If this were the case, however, then it may be more appropriate to reduce prices directly to promote efficient consumption and protection of consumers of the service in question. The single till would not prevent excessive pricing of non-aeronautical services by airports; it merely would require that any monopoly profits were transferred from consumers of those services to the owners of airlines and/or their passengers. As Kahn observed:

> It is no more consistent with economic efficiency or fairness if prices for restaurant meals, duty-free sales, car parking or other commercial services at airports are set at excessive levels, than if airlines were subjected to excessive charges for aviation services. Moreover, the inefficiency resulting from the former monopolistic pricing would not be mitigated, but compounded if the excess revenues were used to hold other airport charges below the level of marginal cost. (Kahn 1991, p. 20)

To the extent that a single till discouraged an airport operator from earning any monopoly profits in non-aeronautical activities, this would be a desirable, if possibly unintended, consequence of such an approach to regulating aeronautical prices.

BARA, Ansett and Qantas (subs 41, 42, and 48) suggested that efficient airport pricing requires that some or all locational rents earned at the airport be applied to reduce aeronautical charges. BARA provided some illustrations effecting this result. However, even in highly-competitive industries such as petrol retailing (cited by BARA, sub. DR54), price-taking producers (or land-owners) in relatively high-yield locations (whether because of convenience or natural phenomena) will earn and retain locational rents.

Ansett argued in a similar vein that:

> In the world of aviation, airline operators can be considered the anchor tenants of an airport. Hence, the value of an airport is largely driven by airline operations, even when

> the land is on 'prime' real estate. If the market for airport services was competitive, airlines would not be expected to contribute to 'locational rents'. (sub. 42, p. 22)

What an anchor tenant pays, however, will depend on the relative attractiveness of the location. At very attractive (and profitable) locations, the owner of a shopping complex is likely to have a choice of anchor tenant in which case higher rentals can be charged. In other cases, there will be a 'scarcity' of tenants and they will be rewarded accordingly.

As discussed in chapter 7 and appendix C, airports are likely to 'reward' airlines for additional passenger throughput in recognition of any demand complementarities between aeronautical and non-aeronautical services. The airline, in this case, provides a scarce and profitable resource (passengers) to the airport. But, there does not appear to be any reason that airlines (and their passengers) should receive *all* locational rents earned at airports. In this regard, the CAA recently concluded that it 'does not accept that airlines have any intrinsic rights over net commercial revenues generated at the airports' (2001c, p. 13). Importantly, others contribute to the earning of rents (including the airport lessee who develops and allocates appropriate spaces within the airport, thus promoting the creation of such rent, the airport land owner and concessionaires).

Another argument for a single till, addressed above in relation to BARA's suggestion for rate-of-return regulation, is that a multi-product monopoly (with a requirement to be (just) self-financing) should be encouraged to set prices in each market to minimise efficiency costs — that is, to implement Ramsey pricing (Crew and Kleindorfer 2001).

This argument appears to rest on two assumptions — namely, that there are significant common costs in supplying aeronautical and non-aeronautical services, and that demand for non-aeronautical services is less elastic than demand for aeronautical services. If these assumptions hold, then common costs could be covered more efficiently by increasing the prices of non-aeronautical services relative to aeronautical services. However, the extent of common costs in the provision of aeronautical and non-aeronautical services appears limited. There may be some shared terminal costs but, even in this instance, costs are likely to be separable. In addition, as the ACCC (sub. 36) pointed out, for those non-aeronautical services sold in competitive markets, prices cannot be raised above marginal cost. Hence there would appear to be limited scope for prices to exceed marginal cost in order to make a contribution to any common, fixed costs.

A case for a single till can be made on the grounds that non-aeronautical earnings, to the extent that they are locational rents, could be 'taxed' in a non-distorting manner (that is, without affecting economic behaviour) and used to reduce

aeronautical charges to ensure short-run marginal-cost pricing of those services. In other words, locational rents could be used to pay for the airport's aeronautical assets. As discussed in appendix C, there may be an in-principle case for such cross subsidisation, at least at uncongested airports where the marginal costs of providing aeronautical facilities are likely to fall below average costs *and* where pricing of aeronautical services would otherwise result in some marginal sales being lost.[15]

However, the disincentive effects of this for airport development of both aeronautical and non-aeronautical services may cause substantial efficiency losses.[16] In part, this is because an airport operator that knows that any additional locational rents earned will be used to reduce aeronautical charges (by more than the amount an airport operator may reduce such charges voluntarily — see chapter 7 and appendix C) will have a reduced incentive to earn such rents in the first place.[17] This may result in:

- the allocation of airport space by the operator to lower-valued uses, in which case some or all rents are forfeited (representing an efficiency loss);
- the 'giving away' of rents to existing concessionaires (such as retailers) by way of low rentals, in which case the rents continue to be earned but there is no transfer to aeronautical service users;
- the 'giving away' of rents to concessionaires but where competition for the rents amongst potential concessionaires means that rents are dissipated to some degree in rent-seeking activities; or
- over-capitalisation of, and cost-padding in, non-aeronautical activities by the operator to reduce measured rents (thus also generating an efficiency loss).

Moreover, aeronautical charges could be pushed below their marginal cost. Particularly at capacity-constrained facilities, a single till would push prices away from market-clearing levels and exacerbate excess demand. In this situation, airport profits from non-aeronautical activities would be transferred mainly to airlines (if the latter were allocated slots under a demand management scheme).[18]

15 If an airport discriminates in its pricing reasonably efficiently, the marginal distortion will be small. In this case, a single till largely would redistribute income without promoting efficiency.

16 To the extent that an airport can retain additional profits during the price-cap period, there will be some incentive to make short-term investments that result in higher non-aeronautical profits.

17 Though it may be feasible to design an arrangement that would provide incentives for the airport operator to earn additional locational rents (such as an up-front agreement under which an airport operator pays expected infra-marginal rents), single-till arrangements in practice tend to appropriate 'excess' (marginal) rents.

18 If demand were not rationed, then queuing, for example, could dissipate surplus.

In addition, as noted above, owners of leases for core-regulated airports bought the leases on the basis that they could retain profits from services that were not subject to the price cap. The (discounted) expected value of this profit stream largely would have been factored into bid prices, benefiting the Commonwealth Government (and taxpayers). Thus, the Government effectively has imposed an up-front 'tax' on expected locational rents.

Price regulation of services where an airport has some market power

A dual-till approach refers to regulation where only those services in which the airport is considered to have market power are subject to a price cap. Typically the regulated 'till' includes only those aeronautical services in which the airport has market power. A dual till may introduce some distortions in favour of non-aeronautical investments, particularly if the price cap, over time, effectively limits the rate of return allowed on aeronautical services. On the other hand, compared with a single till, because a dual till allows aeronautical cost recovery, airports may have a greater incentive to invest in aeronautical (as well as non-aeronautical) activities and increased capacity.

A major practical issue in dual-till regulation is the need to distinguish services in which the airport has market power from those in which it has little market power, and then to separate the costs of providing these classes of service. For Australian core-regulated airports, this task largely has been done under current price-cap arrangements, though there is some dispute about airport market power in some designated aeronautical-related services (for example, refuelling, and taxi and car-parking facilities).

In chapter 6 it was found that major airports are likely to have a relatively high degree of market power in refuelling services. If continued price regulation of airports were considered appropriate, then because refuelling is closely related to aircraft movements, its inclusion in a price cap for aeronautical services at those airports with market power would seem appropriate. This could conflict with undertakings given to airports prior to sale, however.

Car-parking and taxi facilities involve somewhat different circumstances — first, because in the Commission's view, airport market power in these facilities is likely to be moderate (at most) and, second, because these services are not part of the bundle of core-aeronautical services provided by airports and required by airlines. Thus, even if it were considered that these services should be subject to some form of price regulation, it may be more appropriate to apply regulation separately.

FINDING 10.2

The Commission considers that if price-cap regulation were to be continued for any airports, then the cap should apply only to those aeronautical services in which the airport has substantial market power. Profits earned in non-aeronautical activities should not be taken into account in setting the cap.

If an airport exercises significant market power (as opposed to earning locational rent) in any non-aeronautical activity, separate price monitoring or other regulation may be appropriate.

11 Regulatory options: price monitoring, access provisions and general competition law

This chapter continues the discussion of alternative regulatory options from the previous chapter. Price monitoring, access provisions and general competition law are discussed as alternatives or supplements to other forms of price regulation.

11.1 Price monitoring

Price monitoring can be described as a lighter-handed alternative to price caps or cost-based regulation. Though firms may be required to provide information on prices, costs and profits, there is no direct regulatory control over prices charged or revenues or profits earned. The impact of monitoring on firms' pricing decisions is through moral suasion, publicity, and the explicit or implicit threat of stricter forms of price regulation. Monitoring may also influence bilateral negotiations between airlines and airports because airlines will have access to the monitored data, while airports may not have as much information on the airlines. Thus, monitoring can be a less explicit or intrusive method for influencing prices than price caps or cost-based regulation, though it may have similar effects on pricing and costs.

Price monitoring generally has been used in areas where scope for monopoly pricing is limited but there are still some concerns about pricing. As noted in the second reading speech of the Competition Policy Reform Bill, which introduced price-monitoring provisions into the *Prices Surveillance Act 1983* (PS Act):

> Price monitoring may be appropriate where there is concern about the effectiveness of competition, a history of price problems or community concern about price levels or movements, or where industries have been recently reformed or deregulated. (HoR 1995, p. 2800)

Price monitoring at Australian airports

Since 5 October 2001, prices, costs and profits of aeronautical services at Adelaide, Canberra and Darwin airports have been subject to price monitoring, replacing the price caps that previously applied to these services. The prices, costs and profits of

aeronautical-related services at all price-capped airports were monitored by the ACCC until 5 October 2001; since then, aeronautical-related services have been monitored only at those airports where either price caps continue to apply or where aeronautical services are subject to price monitoring.

The ACCC also monitors the quality of selected aeronautical and aeronautical-related services at all core-regulated airports under Part 8 of the *Airports Act 1996* (chapter 3). Operators of core-regulated airports are also required under Part 7 of the Airports Act to provide the ACCC with specified audited financial statements and reports to supplement the information that they are required to produce under corporations law (chapter 3). These monitoring arrangements are discussed in chapter 9.

Some inquiry participants advocated price monitoring as an alternative to price caps. Although the ACCC (sub. 36) supported continued price caps for aeronautical services at major airports, it supported replacement of price caps by price monitoring of aeronautical services,[1] as a transitional measure, at some others. The South Australian Government suggested that price monitoring should replace the price cap at Adelaide Airport:

> … aviation support activities (as defined in Declaration 84) and aeronautical charges should be subject to prices monitoring by an appropriate regulatory body. Monitoring should be less costly for all parties, but provide an incentive for airports to be responsible in setting of prices within a transparent framework that clearly allows for tighter control if the Commonwealth Government considered an abuse of market power was occurring. (sub. 33, p. 2)

The Department of Transport and Regional Services (sub. 39) supported a monitoring model that encouraged commercial negotiation, with monitoring of prices and service quality backed up by scope for regulatory intervention only if any market power were abused.

However, some participants were of the view that light-handed forms of price regulation, such as monitoring, would not constrain the potential for abuse of market power by airport operators effectively — for example, the Board of Airline Representatives of Australia (BARA), Qantas, Ansett and Virgin Blue (subs 41, 48, 42, and DR74). Virgin Blue commented that:

> … the price monitoring framework proposed by the [Productivity Commission's] Draft Report is a weak and inadequate solution to the market power enjoyed by airport operators. The proposal would create significant uncertainty in the industry and would promote a wide range of regulatory gaming behaviour. For example, airport operators

1 The ACCC proposed that the range of aeronautical services be extended to include some services previously monitored as aeronautical-related services.

could reap very high monopoly rents in the five years of the monitoring if they thought either that increased regulation would not be implemented or that the increased regulation would still be 'worth it'. Alternatively, they could use their market power to raise prices to a lesser but still significant and inefficient degree until the end of the probationary period, then raise prices even higher after that period had ended. (sub. DR74, pp. 9–10)

Price monitoring of airports in New Zealand and the United Kingdom

Airports in New Zealand and some airports in the United Kingdom (the revenues of which exceed a specified threshold) are currently subject to light-handed regulatory regimes that involve price monitoring.

Case 1: Light-handed regulation of New Zealand airports

Since 1988, there has been no direct price regulation of aeronautical services provided by New Zealand's three largest airports — Auckland, Christchurch and Wellington. Instead, these airports have been subject to a 'light-handed' regulatory regime where disclosure and consultation requirements, the countervailing power of airlines, and the threat of the introduction of direct price control are intended to act as checks on the abuse of any market power (see box 11.1 and appendix G for a more detailed discussion of the NZ regulatory system).

Box 11.1 **Light-handed regulation — NZ style**

Economic regulation at the major airports (Auckland, Christchurch and Wellington) involves:

- the disclosure of prices, terms and conditions for contractual arrangements, costs, performance measures, and financial performance indicators;
- the use of the Commerce Act 1986 to control anti-competitive behaviour; and
- the prospect of stricter regulation, such as price control, if market dominance is abused.

The regulatory regime aims to encourage negotiated outcomes between parties, without the need for direct intervention by the Government. To this end, airports are required to consult with airlines about charges. Where proper consultation processes are not carried out, airport users can initiate legal proceedings.

Airport companies are subject to general competition law (Commerce Act 1986). Under Part IV, the Governor-General, on the recommendation of the Minister of Commerce, can impose price controls where competition has been restricted.

Sources: CC (2001a); PSA (1995); appendix G.

Regulatory costs of the New Zealand system

It appears that the NZ regulatory system has resulted in a high incidence of litigation between airport users, airport operators and, in some instances, the Government (appendix G). In its recent draft report on airport regulation, the NZ Commerce Commission (CC) noted:

> The major airlines have demonstrated a willingness to withhold airport payments and consider court action. Litigation occurred twice in connection with [Wellington Airport's] setting of charges … Such litigation imposes substantial costs on the airport … Nonetheless, litigation has been repeated for subsequent consultation outcomes at other airports. (CC 2001b, p. 76)

The design of the regulatory system seems to have contributed to the willingness of airport users to resort to litigation. For example, the meaning of the legislative requirement that airports 'consult' with 'substantive' airline customers about price changes has been frequently tested in the courts (appendix G). The willingness of airlines to engage in litigation has been exacerbated by the lack of any dispute resolution options other than the legal system.

In addition, since 1989, there have been three regulatory reviews of the system. The current review by the CC, examining whether price controls should be introduced for 'airfield activities',[2] commenced in 1998, around the same time as the privatisation of Auckland and Wellington airports. This might have encouraged strategic behaviour by both airports and airport users to attempt to influence the outcome of the review.

Have New Zealand airports abused market power?

Auckland Airport was privatised in 1998. In September 2000, Auckland Airport increased landing charges for large commercial aircraft by 8.5 per cent. In September 2001, landing charges were increased by a further 5 per cent, with another 5 per cent increase scheduled for September 2002. Prior to these increases, landing charges had not been increased since March 1992.[3]

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2 Airfield activities, as defined in the Airport Authorities Amendment Act 1997, cover facilities and services that enable the landing and take-off of aircraft, including: the provision of airfields, runways, taxiways, and parking aprons; facilities and services for air traffic and parking control; airfield lighting; and services to maintain and repair airfields, runways, taxiways, and parking aprons for aircraft. The terms of reference do not require the CC to examine the provision of 'passenger terminal activities' and 'aircraft and freight activities' (which are also defined under the Act) (CC 2001a).

3 International landing charges for aircraft with a maximum take-off weight (MTOW) of more than 40 tonnes were increased by 3 per cent in 1992 to contribute to the costs of the development of a new international terminal building. Upon completion of the building the

This phased increase in charges of 18.5 per cent was agreed to by all of Auckland Airport's 'substantive' customers with the exception of its largest airline customer, Air New Zealand. In October 2000, Air New Zealand instigated legal proceedings against Auckland Airport on the grounds of an alleged failure to consult, and withheld payment of the increase in the landing charges. However, in November 2001, the two parties agreed to a 12.5 per cent increase in airport charges (which will apply to all airlines).

Christchurch Airport introduced new landing charges in January 2001 — the first increase in charges for 10 years. The charges were accepted following a consultation process with the airlines. Charges were set for three years and involve price restructuring. Landing charges were previously levied on the basis of the type of aircraft; they are now calculated based on maximum take-off weight (MTOW) (CC 2001b).

Wellington Airport commenced consultation with airlines in July 2001 with a view to setting new charges from July 2002 (CC 2001b). In the 12 years since this airport was corporatised, charges in nominal terms have increased by around 50 per cent. However, most of this increase came from a one-off increase in 1992. Since then charges in nominal terms have increased by 9 per cent.

As noted above, the CC currently is assessing whether prices of airfield activities at these airports should be controlled. According to the CC's draft report released in July 2001:

- … airfield activities … are supplied or acquired in a market in which competition is limited or is likely to be lessened. [And]
- … there is evidence that it is necessary or desirable for the prices of the airfield activities supplied by [Auckland and Christchurch airports] to be controlled in accordance with the Commerce Act in the interests of the acquirers of airfield activities. (CC 2001b, p. xliv)

However, based on an assessment of the net efficiency benefits of introducing price control, the CC found that only airfield activities supplied by Auckland Airport should be controlled. The final report is expected to be released in the second quarter of 2002.[4]

charges were reduced by 3 per cent. In 1997, international and domestic landing charges increased for small aircraft (less than 6 tonnes) (CC 2001b).

4 The CC was to release its final report in November 2001, but this has been delayed because: 'The [CC] is working through a range of complex issues and needs to consider all of the information received. The report is expected to be finalised in the second quarter of 2002' (CC 2001c).

For the period 1988-89 to 1999-00, the CC found that average annual rates of return exceeded target 'competitive' returns at Auckland and Christchurch airports by 3.71 and 2.01 per cent respectively. In contrast, Wellington Airport, over the same period, did not achieve this benchmark rate of return. The CC also estimated a benchmark 'competitive' price for 1999-00 and compared this with actual airport charges.[5] The CC found that prices exceeded the competitive benchmark by less than 3 per cent at Auckland Airport, while Christchurch and Wellington airports were charging *below* 'competitive' benchmark prices (Christchurch by 10 per cent and Wellington by 34 per cent) (CC 2001b).[6] The CC forecast that, based on the announced price increases at Auckland Airport, the differential between actual charges and the competitive benchmark would increase to 15.5 per cent at Auckland, and to 28 per cent at Christchurch Airport by 2002-03.

The CC's conclusions supporting the introduction of price controls at Auckland Airport appear, in many instances, to be based on relatively small estimated margins and to be highly sensitive to the assumptions made, including those regarding land valuation. Crucial to the CC's estimation of excessive returns at Auckland Airport is the exclusion from the asset base of land held for the development of a second runway. The CC's stated rationale for this was that 'today's acquirers of airfield activities should only bear today's costs' (CC 2001b, p.xxvii).

However, as argued by Kahn, it may be efficient to include (at least) part of the costs of future capacity, before it becomes operational, in today's prices:

> The asserted principle that 'today's users should only bear today's costs' is meaningless in an industry with lumpy, long-lived assets and fails to recognise the causal effect of today's demand on the investment requirements of tomorrow, and accords neither with fairness nor economic efficiency … In situations in which it conflicts with efficient pricing — specifically with an efficient behaviour of prices over time — the principle explicitly adopted by the [Commerce] Commission itself dictates that it be ignored. (Kahn 2001b, p. 14)

In the case of Auckland Airport, where airport users have agreed to the need for the development of a second runway by 2007 (AIAL 2001), it would seem efficient for Auckland Airport to incorporate (at least some of the costs) of developing increased capacity into current landing charges.

Other concerns have been raised about the assumptions used in estimating future returns to airports, and the costs and benefits of imposing price control (box 11.2).

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5 Airport charges, for this purpose, were derived by dividing total landing charge revenue by tonnes landed. The 'competitive' price was derived from the asset base and weighted average cost of capital (WACC) determined by the CC.

6 If these results are correct, they imply that these airports were earning their highest rates of return *prior* to privatisation.

For example, the CC assumed that both Auckland and Christchurch airports would fully implement their pricing proposals. As discussed above, since the release of the CC's draft report, Auckland Airport has agreed to reduce the proposed increase from 18.5 per cent to 12.5 per cent.

Box 11.2 Participants' comments on the Commerce Commission's price control study

In responding to the Commerce Commission's (CC's) draft report (into the need for price control of aeronautical services in New Zealand) a number of participants raised concerns about the methodology used by the CC to determine 'benchmark' returns and prices against which the performance of Auckland, Wellington and Christchurch airports were measured. (Consideration of these substantive issues has required the CC to take additional time in making its final decision.) The issues raised include:

- *Asset (other than land) valuation* — the CC adopted the historical cost approach to asset valuation. A number of participants argued that a more appropriate valuation method would be to use a replacement cost approach, such as depreciated optimal replacement cost valuation, to provide a more realistic assessment of the value of airfield assets (AIAL 2001; CIAL 2001; WIAL 2001; NERA 2001b).
- *The exclusion of certain assets* on the basis that only 'used and useful' assets should be incorporated in the asset base. This has been most contentious with regard to land held by Auckland Airport for the development of a second runway. A number of key participants considered that it is reasonable to recover the costs associated with increasing capacity that had been agreed to by major airline customers (AIAL 2001; NERA 2001b; Kahn 2001b).
- *The modelling of future returns* to airports was considered to be simplistic. The CC assumed demand, costs and the capital base would be constant over the modelling period. It was also assumed that price increases announced by Auckland and Christchurch airports would be achieved in full yet Air New Zealand and Auckland Airport concluded an agreement in November 2001 which reduced announced charges (NERA 2001b; AIAL 2001).
- *The dynamic efficiency gains* to be achieved from the introduction of price control were over-estimated. The CC assumed that Auckland Airport presently incurs NZ$6.7 million per annum in dynamic efficiency losses and that this figure could be halved through price controls. These gains were based on assumptions that Auckland Airport's investment in the land held for an additional runway was inefficient. The CC measured the costs of holding this land by comparing the airport's current returns on the land to the returns available in its next best use — land for residential housing. Airports disagreed that investment in land was inefficient (NERA 2001b; AIAL 2001).

In summary, while the ACCC (sub. DR55) described the NZ approach as a failed model, a closer examination demonstrates that, notwithstanding some deficiencies,

it has not been a failure. For example, several major airports have agreed on new aeronautical prices with their major airline customers and these pricing outcomes do not appear excessive. The CC's own analysis indicates Auckland Airport's landing charges in 2000 were less than 3 per cent above the estimated competitive benchmark. Charges at Wellington and Christchurch airports were estimated to be below the competitive benchmark.

Case 2: Light-handed regulation of UK airports

The approach to regulation of UK airports is outlined in box 11.3 and appendix G. The performance of light-handed regulation of non-designated airports holding Civil Aviation Authority (CAA) permission is less well-documented than the performance of price caps. The CAA, as part of its current quinquennial review of price caps at designated airports (due to take effect in 2003), is undertaking a fundamental review of its approach to the economic regulation of those airports. However, the CAA is not examining the effectiveness of a light-handed approach to regulation as part of its current review.

Box 11.3 **Light-handed regulation — UK style**

A system of light-handed economic regulation applies to UK airports that meet a pre-determined revenue threshold (other than the four largest airports that are subject to price caps (Heathrow, Gatwick, Stansted and Manchester)). A key component of this regime is public disclosure of airport charges and accounts. Airports must provide the Civil Aviation Authority (CAA) with their annual statutory accounts and schedules of airport charges. Airports do not need to seek CAA approval before they revise charges, but they must notify the CAA of new charges before they take effect.

Although airports subject to light-handed regulation are not subject to price caps, the option of imposing further restrictions is available to the regulator at any time if the airport is deemed to have abused its market power. On receipt of a complaint, the CAA may investigate and recommend actions or impose conditions on the airport if necessary. Additional restrictions can be applied in cases where it is determined an airport has: unreasonably discriminated against any class of users (or particular user) of the airport; unfairly exploited its bargaining position relative to users generally; or levied charges that are unduly low and cause (or are designed to cause) damage to another airport.

Airports subject to light-handed regulation also can be designated by the Minister of State under s. 40 of the UK Airports Act and become subject to a price cap.

Sources: CAA (2000b); appendix G.

However, there is some evidence that the threat of regulation under the Airports Act has acted as a deterrent to the potential abuse of any market power (Kunz 1999;

Starkie 2001b). Two Scottish airports operated by BAA plc, Glasgow and Edinburgh, were subject to a designation application (that is, to impose a price cap), which the UK Government rejected because there was no evidence of abuse of a monopoly position or of inefficiency. When announcing its decision, the Government added that it believed the threat of designation provided a strong incentive for BAA plc to control its charges. Possibly reflecting this threat, BAA plc capped its prices at both airports voluntarily — initially with the formula Retail Price Index (RPI)-3 (Starkie 2001b).

Approaches to price monitoring

The major potential advantages of price monitoring over stricter price controls are:

- the scope it provides for commercial relationships to develop;
- lower levels of regulatory intervention in price-setting and hence reduced opportunity for regulatory error and consequent distortions in production and investment; and
- lower compliance costs.

On the other hand, to ensure that market power is not abused, lower levels of regulatory intervention in price setting must be balanced by a credible threat that abuse of market power can and will be identified and appropriate action taken.

Therefore, in order to achieve the appropriate balance, key issues in the design of a price monitoring regime are specification of:

- the information to be disclosed (to assist in determining whether market power has been abused and also to promote informed commercial relationships); and
- the nature of the 'threat' or over-arching constraint on abuse of market power, including in what circumstances action can be taken and the form that action will take.

If these elements are not clearly spelt out, there is a risk that light-handed regulation could become ineffective or, indeed, as intrusive as stricter price controls. Professor Forsyth noted, in the context of regulation of airports in New Zealand, that this could result in inefficiencies similar to those that occur when stricter forms of price regulation apply:

> The threat to regulate is not the same as actual regulation, but its impacts on the firm may well be much the same. The regulated firm does not know what behaviour on its part will induce the regulator to impose formal regulation. One possible trigger might be its profitability; if the firm earns high or supernormal profits, the regulator may intervene. If this is what the airports believe, this shadow regulation would have the

same effects as cost plus regulation. The incentive to keep costs at a minimum would be weak, since lower costs and higher profits will result in regulation being imposed. The inefficiencies created by cost-plus regulation will also be present with this shadow regulation. (sub. 5, p. 19)

Triggering stricter regulation

The potential for inefficiencies may be alleviated to some extent by defining the behaviour on the part of the regulated firm that would trigger stricter forms of price regulation (or, indeed, 'good' behaviour that would *not* trigger stricter regulation). Nonetheless, clearly defining such behaviour may be difficult — high prices may be a signal that new investment is required rather than an indication that monopoly prices are being charged; high profits may reflect entrepreneurial skills rather than market power, and increases in prices may simply reflect changes in costs or that prices previously were too low. In a capacity-constrained airport, higher prices may be a means to allocate the available capacity efficiently. This suggests that a broad set of principles is likely to be preferable for guiding efficient behaviour to specific criteria that if applied in isolation may not be consistent with efficient outcomes.

Specific criteria for triggering regulatory intervention could also encourage strategic behaviour to this end. There is a need for a credible threat of stronger regulation, for reasons discussed above. If it were made clear, however, that any such regulation would not be reintroduced within a predetermined period, there would be less potential for the undermining of *bona fide* commercial negotiations. A review at the end of that period could then assess whether stricter forms of price regulation, further monitoring, or any other action were warranted at individual airports. The monitoring period would need to be long enough to encourage commercial negotiation, but not so long that the threat of reintroduction of stricter forms of price regulation was not an effective deterrent against abuse of market power.

The review at the conclusion of the monitoring period could take into account changes in the competitive environment in which an airport operates and the behaviour of the various parties during the monitoring period. Information collected through monitoring could form part of that assessment.

While the regulator is likely to have expertise in analysing monitoring information, as a matter of principle it would be desirable to separate policy and regulatory roles by having the review conducted by an independent body, as noted by the Commission in its review of the PS Act (PC 2001c).

Information disclosure

The effectiveness of a monitoring regime also would depend on whether disclosure of information was mandatory or voluntary. Although the compliance costs of voluntary disclosure may be lower, a legislative requirement for disclosure could help ensure compliance and allow monitoring of information that is not publicly available. Penalties for non-compliance may also encourage monitored firms to comply with disclosure requirements.

Comprehensive requirements for disclosure that are spelt out clearly at the start of the monitoring period, and not altered, may help to minimise regulatory (in this case, monitoring) creep. Although there may be occasions when it is desirable to vary disclosure requirements or seek further information, doing so may increase compliance costs and regulatory uncertainty. Additional information could be sought and provided on a voluntary basis, although there would be no guarantee that the monitored firm would provide the requested information.

Information that could be disclosed under a price-monitoring regime includes charges for aeronautical and aeronautical-related services, revenues, the level and incidence of operating and capital costs, various measures of profitability, service quality and productivity. Data for non-aeronautical activities might also be appropriate, for example, in relation to cost and revenue allocation. The disclosure of such information may:

- help in assessing whether any market power is being abused;
- facilitate comparisons of monitored variables between airports (both within Australia, and between Australian and overseas airports); and
- allow airport users to negotiate better with airport operators.

The information that airport operators in New Zealand are required to disclose is detailed in box 11.4.

Compliance costs of monitoring

BARA (sub. 41) stated that the compliance costs of monitoring are not necessarily lower than the compliance costs associated with the current regulatory arrangements. Sydney Airports Corporation Limited (SACL) (sub. 27) also noted that price monitoring incurs compliance costs. However, the compliance costs of regulation will be reduced where the information required for monitoring is less detailed and its analysis by the regulator less complex than for price caps. Airport operators already may be required to collect and disclose some of the required

information under other legislative provisions such as corporations law, although perhaps in less detail.

Box 11.4 **Information disclosure requirements in New Zealand**

The Airport Authorities (Airport Companies Information Disclosure) Regulations 1999, which apply to financial statements prepared on or after 1 January 2000, require specified airport companies to disclose information, which can be summarised as:

- segmented financial accounts for identified airport activities;
- passenger charges and charges for identified airport activities, and the methodology used to determine these charges;
- the basis for allocating assets to identified airport activities;
- details of asset revaluations and any reports on which revaluations were based;
- operating costs of identified airport activities;
- weighted average cost of capital (WACC) and the methodology and calculations used to determine WACC;
- numbers of passenger and aircraft movements;
- interruptions to services; and
- the number of people employed in identified airport activities.

Source: CC (2001a).

Indeed, even in the absence of price monitoring, airport operators may collect at least some of the required information for their own purposes, and may make it publicly available of their own accord, as has been suggested by Melbourne Airport (PC 2001b). It was noted in chapter 9 that airport operators have incurred costs complying with current monitoring arrangements, though costs have not been large because the information requirements have not been onerous.

Confining monitoring only to those airports and services where there is clearly scope for abuse of market power could help to minimise any compliance costs. Ensuring that information is not required too frequently could also help. However, this should be balanced against the need for regulators and others (such as airport users) to gain an accurate picture of changes in monitored variables over time.

FINDING 11.1

Where airport market power is not substantial, or where there are commercial constraints on the misuse of market power, price monitoring has significant advantages over stricter forms of price regulation. Provided there is no easy recourse to regulatory intervention, a price-monitoring regime can promote

efficient outcomes while reducing the risk of regulatory failure. Price monitoring also has the potential to reduce compliance costs and promote commercial negotiations.

Implementation of price monitoring

Price monitoring could be implemented under the PS Act, the *Trade Practices Act 1974* (TP Act) or industry-specific legislation. Price monitoring of aeronautical and aeronautical-related services at some core-regulated airports currently is conducted under s. 27A of the PS Act. However, in its inquiry into the PS Act, the Commission concluded that the PS Act is an unsatisfactory vehicle for conducting inquiries and monitoring (PC 2001c). It recommended that the PS Act be repealed, and a new section incorporated in the TP Act to provide for monitoring and inquiries (see below).

The TP Act contains a number of existing provisions under which price monitoring could be conducted:

- s. 28 provides for the functions of the ACCC in relation to dissemination of information, law reform and research;
- s. 29 requires the ACCC to comply with directions of the Minister and requirements of Parliament;
- Part IVB provides for voluntary or mandatory codes to be declared by the ACCC; and
- s. 29B details the functions and powers of the National Competition Council (NCC) (PC 2001c).

While these provisions do not provide specifically for price monitoring, they permit the Minister to direct the ACCC or NCC to undertake research and analysis, and could allow the Minister to direct either organisation to conduct price monitoring. However, as noted in the review of the PS Act, these provisions lack a clear framework for defining the objectives of monitoring and ensuring its appropriate application.

The TP Act could also be amended to provide for price monitoring. This could be done through either generic provisions as proposed in the Commission's review of the PS Act or industry-specific provisions. The Commission argued that the inclusion of a new part in the TP Act:

> … would consolidate the various legislative elements of Australia's competition policy into one legislative package. It would complement Part IIIA and Part IV of the TP Act as an element of Australia's competition policy. (PC 2001c, p. 84)

The Commission's recommendation to repeal the PS Act and incorporate a new part in the TP Act, providing powers to undertake public inquiries and to implement monitoring programs, can be summarised as follows:

- firms may only be subject to monitoring following a recommendation from a public inquiry;
- a public inquiry could only be initiated where the market is of national significance and there is evidence of monopolistic pricing;
- the inquiry would be conducted by a body other than the regulator;
- the information to be disclosed would be determined during the inquiry process;
- the ACCC would be responsible for collating and auditing monitoring information and its public dissemination, but could not make any determination on the appropriateness of prices or make recommendations to government under this monitoring provision; and
- monitoring would be for a limited period, and the monitoring declaration automatically revoked at the end of that period.

Industry-specific amendments to the TP Act could be made to provide for price monitoring of airport services. The Postal Services Amendment Bill 2000 tabled in Commonwealth Parliament proposed, among other things, to amend the TP Act by introducing industry-specific provisions (section XID) to regulate the prices charged by private firms for standard letter services. While the Bill was not enacted, it would have been the amended TP Act, rather than the PS Act, that provided for price regulation of postal services. Alternatively, industry-specific price-monitoring provisions could be incorporated into the Airports Act.

The Commission is of the view that any criteria for monitoring incorporated into industry-specific legislation should reflect generic monitoring criteria and be consistent with the monitoring principles discussed in the Commission's review of the PS Act.

Another issue relevant to the implementation of a price-monitoring regime is by whom it would be administered. A number of organisations have expertise in monitoring prices, for example:

- the ACCC conducts price monitoring in a number of sectors, including airports, under various legislative instruments;
- the Bureau of Transport Economics (BTE) monitors prices, costs and other variables in a range of transport-related industries; and

- the Productivity Commission monitors the performance of government trading enterprises and conducts national and international benchmarking of the performance of key Australian industries.

As noted above, under its recommendation to repeal the PS Act and insert a new section in the TP Act, the Commission proposed that the ACCC be responsible for collating and auditing information and ensuring compliance. This would ensure the ACCC's expertise in monitoring prices is applied in the new regime. However, Melbourne Airport, although not opposed to the ACCC taking such a role, suggested that other agencies such as the BTE may also be able to fulfil that role, particularly if the aim of monitoring is to inform policy makers rather than to trigger intervention in pricing decisions.

11.2 Access provisions and general competition law

Reliance on access provisions and general competition law and the implicit or explicit threat of re-regulation to constrain potential abuse of market power would allow airport operators to set prices without regulatory intervention or oversight *provided* they did not breach the provisions of Part IV and were not subject to arbitration under Part IIIA of the TP Act.

Regulating access to and anti-competitive conduct of airports

Part IV

Though Part IV of the TP Act proscribes certain practices that can create market power through restricting competition or through mergers, and makes illegal the use of market power to harm or eliminate competitors where market power is already established, Part IV relies on *ex post* remedies for abuse of market power, and monopoly pricing *per se* is not proscribed. Although s. 46 can address pricing issues such as price fixing or predatory pricing, it does not directly address situations where market power results in monopoly prices. There would be no contravention of s. 46 unless a pricing decision were taken for one of the purposes it proscribes. The legal costs associated with prosecution for contravention of the provisions of Part IV may also be significant, and it may be difficult to prove an offence has occurred.

Though it would be possible to amend Part IV to address pricing issues relating to airports, amending generic provisions for an industry-specific purpose is unlikely to be an appropriate approach due to its effects on other sectors of the economy.

Consideration of changes to Part IV is likely to be part of the Government's announced review of the TP Act, but it is outside the terms of reference of this inquiry. Thus, the discussion below is focused on access regulation. Part IV would continue to apply regardless of other legislative arrangements.[7]

Access arrangements

Airport operators currently are subject to s. 192 of the Airports Act and Part IIIA (the National Access Regime) of the TP Act. The five-year, automatic declarations of privatised, core-regulated airports cannot be renewed under s. 192. However, new airport-specific access arrangements or Part IIIA could continue to complement any future price regulation of airport services or, indeed, provide an alternative to an airport-specific price-regulation regime. Prices of airport services could be regulated indirectly through regulation of the terms and conditions of access to an airport service, if a service were declared.

There has been limited application of access provisions and general competition law to airports to date (chapter 9). However, reliance on these provisions as an alternative to direct regulation of prices could result in greater use of these provisions by airport users.

Access regulation could have some advantages compared with price regulation. It is activated only when a user complains and provides some encouragement of commercial negotiation and agreements (PC 2001a). Though compliance costs can be high, once precedents are set, the need for arbitration may decrease and the costs of any arbitration may decrease as precedents are set and participants become more familiar with the process.

Some participants argued that the general access provisions available under Part IIIA (and the provisions of Part IV) provide sufficient regulation to prevent airports abusing any market power. For example, the Australian Airports Association argued that:

> Due to the significant countervailing power of airlines, and the active competition between airports for a range of important services, a strong argument can be made that both the Prices Surveillance Act … and the automatic declaration of airport services for the purposes of Part IIIA of the Trade Practices Act 1974 under s. 192 of the Airports Act 1996 should be removed. This would leave airports subject to declaration under Part IIIA on a case by case basis in the same way as any other infrastructure is liable to Part IIIA, and subject to the usual application of Part IV of the [TP Act]. (sub. 15, p. 5)

[7] Part VII of the TP Act confers on the ACCC power to authorise practices otherwise proscribed under Part IV.

Nonetheless, application of Part IIIA to airports to date has raised a number of concerns, including the degree to which the declaration criteria are open to interpretation, that the national significance test is linked to the facility rather than the service provided by the facility, and that there is considerable scope for delays in the declaration process (see chapter 9 and PC (2001a) for a more detailed discussion).

In the final report for its review of the National Access Regime, the Commission proposed a number of amendments to the current Part IIIA regime to address these and other concerns. Those relevant to airports include:

- modification of the declaration criteria, including a requirement that declaration would promote a substantial increase in competition;
- inclusion of pricing principles to improve certainty for access seekers and providers;
- provision for the ACCC to conduct multilateral arbitrations following consultation with the parties to the dispute;
- provision to lodge undertakings after a service has been declared;
- appeal rights for decisions on undertaking applications; and
- exemption from Parts IV and VII of the TP Act of the terms and conditions of: arbitrated determinations for declared services; agreements reached under certified regimes or negotiated under accepted undertakings; and private agreements for declared services covered by registered private contracts.

If the Commission's proposals were implemented, several concerns in relation to the application of the current Part IIIA regime to airports would be addressed.

An airport-specific access regime?

As it stands, s. 192 of the Airports Act effectively lapses once initial access declarations expire. (As noted in chapter 3, the Minister is required to specify the expiry date of the determination, and no power is conferred on the Minister under s. 192 to renew the declaration once it has expired (ACCC, pers. comm., 5 July 2001).) These declarations expire on 30 June 2002 for Phase 1 airports and on 30 June 2003 for Phase 2 airports.

Though s. 192 could be amended to continue to operate in its current form, at issue is whether there is a case for continuation of an airport-specific access regime and, if so, what form that regime should take.

The stated rationale for s. 192 was the Government's desire to encourage access to airports by new airline entrants. However, for reasons discussed in chapter 9, there are strong commercial incentives for airports to promote access by new airlines and s. 192 does not appear to have been instrumental in influencing this outcome. Importantly, two airports have built new terminal facilities for entrants, making gate allocation at existing domestic terminals unnecessary. This is not to say that access issues with respect to new entrants will not arise in future.

Moreover, that s. 192 has not been invoked extensively need not mean that it has not influenced airport behaviour in other circumstances. As discussed in chapters 6 and 7, airports may have some incentive to frustrate access to other elements of the airport where, by doing so, competition in a particular market (such as car parking) can be constrained and monopoly profits earned by the airport operator. However, airport operators do not seem to have strong reasons to deny or frustrate *airline* access to the airport.

Another possible rationale for airport-specific access arrangements is the range of airport services and the large number of potential access seekers, raising the transactions costs of access regulation. This could warrant more streamlined access provisions than provided in Part IIIA. The ACCC argued that:

> The difficulties experienced with the existing declaration mechanisms under the Part IIIA suggest that a declaration procedure whereby access seekers must first seek declaration of services before being entitled to access imposes a significant barrier to entry. This would seem to be unnecessary in the context of an industry where there is clearly a need for an effective access regime and a great deal is known about the nature of services provided at airports. (sub. 38, p. 12)

Qantas made a similar argument:

> While the application of the declaration criteria is relatively straightforward to a large range of airport services, the procedural requirements under Part IIIA to demonstrate the criteria in each access application is burdensome and time consuming … (sub. 48, p. 27)

Though Qantas stated it has 'experienced substantial difficulty in negotiating access to a range of services at airports', it has not sought declaration of any airport services at any airport under either s. 192 or Part IIIA (sub. 48, p. 24).

The only application of Part IIIA to airports to date has been the Australian Cargo Terminal Operators (ACTO)[8] declarations at Sydney and Melbourne International Airports (chapter 9). Indeed, these are the only declarations in any industry to date under Part IIIA. As noted in chapter 9, there were significant delays involved in

8 As noted in chapter 9, ACTO has been deregistered.

these declarations and subsequent appeals, and the administrative and legal costs are likely to have been significant. However, insofar as precedents have been determined, these costs should not all be attributed to this specific case. It is also likely that clarification of the Part IIIA declaration criteria through the Australian Competition Tribunal review of the ACTO declarations at Sydney International Airport would result in fewer delays in future declaration decisions.

In broad terms, an airport-specific access regime may be warranted where there is a justification either for weaker declaration criteria and/or different processes and procedures.

Currently, privatised core-regulated airports are declared automatically under s. 192, though access seekers must apply to have an airport service declared in order for arbitration of terms and conditions for that service to occur. Box 11.5 sets out the declaration criteria under s. 192 and Part IIIA respectively.

The Part IIIA declaration criteria are designed to ensure that the access framework is applied only where access would promote competition in a related market, it is uneconomic to develop another facility to provide the service, and the facility is of national significance. The criteria for declaration as an airport service under s. 192 generally are weaker than the Part IIIA criteria.[9] There is no requirement under s. 192 that access to a service promote competition in another market, and the facility need not be of national significance. Some participants noted (for example, Hastings Funds Management (sub. 19) and SACL (sub. 27) that this could result in broader coverage of services under s. 192 than would occur under Part IIIA.

The ACCC (sub. 38) suggested that the requirement under s. 192 that 'facilities cannot be economically duplicated' should be amended to reflect the (possibly less stringent) Part IIIA requirement that 'it would be uneconomical for anyone to develop another facility to provide the service'. It also advocated 'specification of certain up-front declared services, coupled with a mechanism for declaration of other services (or variation of the initial list) in the future' (sub. 38, p. 15).

Qantas (sub. 48) recommended continuation of an airport-specific access regime because:

> … it is both unnecessary and administratively inefficient to demonstrate the applicability of the declaration criteria each time an access application is made in respect of an airport. It is for that reason that the Federal Government enacted s. 192 of the *Airports Act*. As the Productivity Commission is aware, s. 192 deems each airport

9 A possible exception is that criterion (b) under Part IIIA, which requires that it be uneconomical for anyone to develop another facility to provide the service, is potentially a weaker test than the s. 192 test that the facility providing the service cannot be economically duplicated (PC 1998a).

service to be a declared service for the purposes of Part IIIA. Section 192 does not completely remove inefficiency from the administrative process, but it does improve it greatly. (sub. 48, p. 27)

Box 11.5 **Declaration criteria in existing legislation**

S. 192

S. 192(5) of the Airports Act states that an *airport service* means a service provided at a core-regulated airport, where the service:

(a) is necessary for the purposes of operating and/or maintaining civil aviation services at the airport; and

(b) is provided by means of significant facilities at the airport, being facilities that cannot be economically duplicated;

and includes the use of those facilities for those purposes.

Part IIIA

S. 44G(2) of the Trade Practices Act states:

The [National Competition] Council cannot recommend that a service be declared unless it is satisfied of all of the following matters:

(a) that access (or increased access) to the service would promote competition in at least one market (whether or not in Australia), other than the market for the service;

(b) that it would be uneconomical for anyone to develop another facility to provide the service;

(c) that the facility is of national significance, having regard to:
  (i) the size of the facility; or
  (ii) the importance of the facility to constitutional trade or commerce; or
  (iii) the importance of the facility to the national economy;

(d) that access to the service can be provided without undue risk to human health or safety;

(e) that access to the service is not already the subject of an effective access regime;

(f) that access (or increased access) to the service would not be contrary to the public interest.

Sources: Airports Act 1996; *Trade Practices Act 1974*.

Further, Qantas advocated that s. 192 declaration criteria be amended so that a service should only be required to be *used* for the purposes of operating and/or maintaining civil aviation services at the airport, rather than be *necessary* for the purposes of operating and/or maintaining civil aviation services. It also considered that s. 192 should apply to all core-regulated airports (Sydney Airport in particular),

rather than just to privatised core-regulated airports, and that provision should be made for airport operators to lodge access undertakings following declaration under s. 192.

In its review of the National Access Regime, the Productivity Commission found:

> The current approach of a national access regime operating in tandem with industry-specific regimes has significant advantages. In effect, it draws on the strengths of both the generic and specific approaches, while avoiding some of the pitfalls of a one-dimensional solution.
>
> Some changes to both Part IIIA and Clause 6 of the Competition Principles Agreement are nonetheless required to strengthen the access framework and to discourage unwarranted divergence across industry-specific regimes. (PC 2001a, p. 122)

In other words, while industry-specific regimes may be warranted, those regimes should as far as possible reflect the principles in the general access framework.

The Commission's report also suggested amendments to Part IIIA to strengthen declaration criteria such that facilities and services would be declared only where there is a likelihood of efficiency benefits. The amendments include a recommendation to require access (or increased access) to promote a *substantial* increase in competition (PC 2001a).

In contrast, the ACCC's proposal for up-front declaration of certain airport services would seem to by-pass altogether the need for assessment of likely efficiency outcomes of declaration, while the Qantas proposal would weaken further s. 192 criteria relative to current Part IIIA declaration criteria. Given that an airport's incentives to deny access are limited, the case for considerably weaker declaration criteria than those applied to other industries does not seem to be strong. Despite its proposal for listing declared airport services, the ACCC also observed:

> When a service provider is vertically separated it will usually have little incentive to deny access. While the service provider may exploit its market power by setting high prices it is unlikely to manipulate other terms and conditions to limit access. Nevertheless the negotiate-arbitrate provisions allow an access seeker to seek arbitration over non-price terms and conditions. This could result in unnecessarily intrusive arbitration over detailed operational matters. (sub. 36, p. 94)

This suggests that application of the negotiate–arbitrate access model should be confined to those situations where airports clearly have an incentive to deny access and where declaration of the service would promote efficiency benefits. In the Commission's view, application of Part IIIA criteria to airports would promote this outcome. If changes proposed to the Part IIIA declaration criteria in the Commission's report on the National Access Regime were implemented, this conclusion would be strengthened.

To some extent the ACCC's proposal is designed to address procedural problems created by the large number of services provided by airports and multiple users of airport services. Qantas (trans., p. 275) also was of the view that a negotiate–arbitrate model was not suited to industries such as airports where there are many users and multiple transactions.

In addition, Melbourne Airport stated:

> Part IIIA is predicated on there being a single access provider in dispute with a single customer. It seems to us that if Part IIIA were to be relied upon, airports could face the possibility of being constantly in arbitration with airlines and the ACCC. (sub. 7, p. 56)

However, this could be addressed to some extent within Part IIIA by allowing 'multilateral' arbitration of terms and conditions of access to a declared service. As noted, the Commission has recommended such an amendment to Part IIIA in its review of the National Access Regime. If such a change were not implemented within the National Access Regime, an industry-specific regime that allowed for multilateral arbitrations (but which was consistent with Part IIIA in other respects), may warrant consideration.

FINDING 11.2

There do not appear to be any grounds for airport-specific access arrangements that set lower declaration thresholds than Part IIIA of the TP Act. An airport-specific regime that allowed for multilateral arbitrations might be warranted if such arbitrations were not provided for in the National Access Regime, as recommended separately by the Commission in its review of that regime.

Undertakings

Some participants supported a model under which airport operators would develop 'undertakings', which set out the terms and conditions under which airport services would be provided.

Part IIIA undertakings

Part IIIA currently provides for airport operators to lodge access undertakings with the ACCC, provided the services in question have not been declared for access purposes. Airport services at privatised core-regulated airports were declared automatically for the purposes of Part IIIA under s. 192, though they were given a period of grace during which they could submit undertakings. Currently there is no provision for undertakings covering declared airport services to be lodged (chapter 3). However, declarations under s. 192 will expire on 30 June 2002 and

30 June 2003 for Phase 1 and 2 airports respectively, after which airport operators will be able to submit undertakings under Part IIIA.

As discussed in chapter 9, shortly after their privatisation, two airports submitted draft undertakings but these were not acceptable to the ACCC. An apparent reluctance to pursue the undertakings further might have been due to a perception on the part of airport operators that lodgement of an undertaking acceptable to the ACCC was less appealing than the risk of declaration and subsequent arbitration. If airport operators considered that there was a greater likelihood of application of access regulation in the absence of direct price regulation, they may be more likely to submit undertakings. Further, changes to Part IIIA proposed in the access inquiry, such as provision for appeal of decisions not to accept undertakings, may increase the likelihood that undertakings will be lodged successfully. The proposal to allow lodgement of undertakings after a service has been declared may also provide some encouragement.

Qantas (trans., pp. 275–6) suggested that an access model based on an industry code such as the National Electricity Code (NEC) (box 11.6) may be a desirable approach to regulating prices for airport services. In particular, Qantas argued for regulation of minimum service levels:

> Qantas believes that the most effective and practical means to ensure minimum levels of service quality within the airport industry is to include within the regulatory framework service level commitments. These are included in other regulated industries such as electricity. (sub. 48, p. 5)

In the final report for its review of the National Access Regime, the Commission noted that the access arrangements in the NEC 'result in a more prescriptive approach to the provision of access than regimes in some other sectors that rely more on commercial negotiations between the parties' (PC 2001a, p. 450). The Code effectively regulates prices and other terms and conditions of access. If such a regime were imposed on airports it would impose considerably stronger regulation than currently applies.

Airport-specific undertakings

Some participants in this inquiry supported less prescriptive, industry-specific undertakings. Though SACL (sub. 27) preferred complete deregulation of prices, it outlined a proposal for a 'prices and quality undertaking' in the event that the Commission was of the view that some form of regulation was warranted. SACL suggested that s. 192 of the Airports Act could be amended to allow airport operators to develop prices undertakings setting out the services covered, the prices

to be charged for services, arrangements for varying prices, and the service levels to be provided.

Box 11.6 **National Electricity Code**

The national electricity market is governed by the NEC, which is jointly administered by the ACCC, the National Electricity Code Administrator (NECA) and State regulators, and has three separate but related elements:

- an access code — rules governing the way in which participants gain access to, and connect with, transmission grids and distribution networks, including the principles for regulating access prices;
- market rules — rules governing how generators and customers trade through the common pool, and how the physical system is controlled; and
- administrative arrangements — rules governing how disputes are settled, how the code is enforced and changed, and establishing transitional arrangements for each participating jurisdiction.

Each transmission and distribution business owner or operator is required to submit an access undertaking consistent with the code. To streamline the process, NECA submitted an access code on behalf of service providers pursuant to s. 44ZZAA of the *Trade Practices Act 1974*. Service providers also have the option of submitting individual undertakings.

The ACCC, in the case of transmission services, and the relevant State regulator, in the case of distribution services, is required to determine an annual revenue requirement for the regulated assets under the principles set out in the code, and approve prices for the use of networks by third parties within that revenue requirement. The code also requires regulators to incorporate CPI-X or other incentive-based variants in the revenue caps to encourage providers to improve productivity.

Sources: ACCC (2000e); PC (2001a).

On the other hand, Melbourne Airport proposed:

> … that s. 192 be repealed and replaced by an arrangement whereby those airport services that are considered to have market power sufficient to warrant price regulation may be regulated under a 'pricing undertaking'. Where airports were considered not to require regulation, or services provided at larger airports were considered contestable, regulation would be undertaken under the standard provisions of the TP Act. (sub. 7, p. 57)

In a subsequent submission, Melbourne Airport supported the SACL proposal for an approach allowing airport operators to develop prices and quality undertakings, though it continued to advocate replacement of s. 192 by an industry-specific regime. Melbourne Airport suggested that development of undertakings by airport operators should be optional, and that the likelihood of declaration under Part IIIA

would provide an incentive for the operators of large airports to develop undertakings. In its view, industry-specific legislation should specify:

- Items that a PQU [prices and quality undertaking] must contain (eg duration, definition of services etc) similar to section 91 of the *Airports Act 1996* in relation to Major Development Plans.
- Requirement to consult and inform the Minister of the outcome similar to sections 92 and 93.
- Matters the Minister must have regard to in approving a PQU similar to Section 94. These might include the impact on efficiency and investment, impact on competition … in other markets, the public interest (and in particular the interests of the travelling public) and ensuring that the PQU does not lead to any abuse of market power.
- Provisions for variations similar to section 95.
- Relationship between the PQU and the National Access Regime more generally.
- Enforceability of charges levied under the PQU. (sub. 37, p. 14)

The ACCC suggested that, although airports could be required to submit for approval a set of price and non-price terms and conditions applicable to the provision of the declared services at the airport and a dispute resolution mechanism:

> … experience with airport regulation in Australia to date suggests that there are a number of difficulties associated with putting in place *ex ante* terms and conditions for access to core airport services. These arise primarily from the fact that airports provide a range of interlinked but different (non-homogeneous) services, and that the dynamics of the provision of those services is constantly changing in response to changing market conditions. As a result, it is difficult to establish generic terms and conditions that are sufficiently precise as to ensure that disputes will not arise in relation to their application in a particular case. (sub. 38, pp. 14–15)

Yet the ACCC suggested an alternative model that involved:

> … the imposition by law (whether in the enabling legislation or in subordinate instruments) of certain 'standard access obligations'. These obligations could provide that airport operators provide access to the declared services on the basis of non-discriminatory, objective and transparent terms and conditions. The obligations could also include an obligation to ensure that prices reflect costs.
>
> Appropriate mechanisms would be required to enable the enforcement of those obligations, whether by way of court action initiated by the Commission [ACCC] and/or the arbitration of disputes as to whether those obligations have been fulfilled.
>
> … legislative obligations could be enforceable in the courts. Alternatively, or in addition, access seekers could be empowered to notify disputes for arbitration; in that event, the arbitration should be limited to determining whether or not the legislative obligations have been complied with. (sub. 38, p. 15)

The mandatory nature of this model, combined with requirements for non-discriminatory terms and conditions and mechanisms for enforcement of obligations, could result in significant regulatory intervention in firms' pricing decisions and inefficient outcomes (for example, if discrimination were prevented).

Just as the Commission does not see a strong case for setting weaker declaration criteria for airports, it does not consider that airports should be compelled to submit or meet prescribed access obligations. At the same time, the Commission does not consider that airports should be allowed exemption from declaration for access purposes on the basis of undertakings that otherwise would not satisfy Part IIIA criteria. In other words, insofar as third party access is concerned, airports should be treated neither more strictly nor more leniently than other industries.

FINDING 11.3

There are insufficient grounds for an airport-specific access undertaking regime.

Commercial agreements

Several participants suggested models that promoted commercial agreements, backed up by either general access provisions of the TP Act or by special regulatory arrangements. Westralia Airports Corporation proposed a model:

> … whereby airports and airlines enter into commercially negotiated aeronautical services agreements, incorporating the scope and pricing of airport services, the conditions of use by airlines of the airport, the process for consultation and exchange of information and quality of service. Such agreements when accompanied by the access provisions of the Trade Practices Act and the significant countervailing market power of airlines would constitute an effective body of counter-measures to alleviate concerns over abuse of market power by airports. (sub. 21, p. 1)

It suggested these agreements may require legislative support such as a Government policy directive, which should provide guidance for abuse of market power and define key parameters of the airport–airline consultation environment that would apply in the absence of agreement between the airport and airlines. The Department of Transport and Regional Services (sub. 39) supported a model that combined monitoring of prices and service quality with provision for development of commercial agreements between airport operators and users, backed up by scope for regulatory intervention if any market power were abused (section 11.1).

The model advocated by Ansett, which in its view would provide flexibility for airports and airlines to reach commercial agreement, while providing a framework to moderate the market power of airports, is a variation of the industry-specific

approach to the development of commercial agreements. Though the model was not outlined in detail, its key features were:

- broad specification of the elements to be contained in the contractual agreements between airlines and airports;
- recourse to arbitration only if agreement on … individual elements cannot be reached, but with clear mechanisms to discourage unnecessary recourse to the arbitrator; and
- [specification of the] powers and procedures of the arbitrator. (sub. 42, p. 47)

While a shift towards commercial agreements is attractive, in the Commission's view, agreements (or their contents) should not be made mandatory. This would undermine the fundamental objective of promoting *commercial* relationships. Development of agreements on a voluntary basis, on the other hand, may promote commercial relationships and efficient outcomes. For example, if provision were made for a review of regulatory arrangements, and development of agreements was to be taken into account by the review, airport operators could be encouraged to develop agreements. The possibility of declaration under Part IIIA could also provide such an incentive.

Development of guidelines for commercial agreements, including consultation and dispute-resolution mechanisms, might be of some assistance to airport operators and users, at least during the transition from regulated prices. Some participants supported regulatory approval of such agreements. However, this would require a prescriptive approach to their content. On the other hand, provision for lodgement of agreements voluntarily entered into might promote transparency and user acceptance. Agreements could be lodged if they specified, for example:

- agreed terms and conditions (including prices) of airport use, including the services covered, service quality and information to be provided by the parties;
- dispute-resolution mechanisms (for example, scope for independent arbitration);
- the period covered by the agreement; and
- consultation and other procedures to be followed to vary the agreement.

Importantly, however, acceptance of lodgement would not involve an assessment by the regulator of the prices, terms or conditions agreed between the parties.

That such guidance from government may be helpful for commercial entities in a commercial environment is perhaps surprising. The reason for it is the historical legacy of decades of government ownership of this industry and the pervasive effects of regulation.

FINDING 11.4

Facilitation and encouragement of agreements between airport operators and users has the potential to promote commercial relationships and efficient outcomes.

12 Appropriate future regulation: the Commission's assessment

In this chapter, the Commission outlines its assessment of the need for price regulation of particular airports and airport services, and its preferred option for such regulation.

12.1 The Commission's task

It is worth repeating that the purpose of this inquiry, as set out in the terms of reference, is:

> … to examine whether new regulatory arrangements, targeted at those charges for airport services or products where the airport operator has been identified as having most potential to abuse market power, are needed to ensure that the exercise of any such power may be appropriately counteracted.

In making its assessment and recommendations, the Commission also is asked to take into account several 'principles':

(a) the [current] CPI-X price cap applied to aeronautical charges during the first five year period of private ownership will no longer operate;

(b) future prices regulation should be applied to those aeronautical services and those airports where airport operators have most potential to abuse market power;

(c) airport operators may propose to the inquiry alternative approaches to prices regulation which would provide equal or better protection to users;

(d) prices regulation should minimise compliance costs on airport operators and the Government;

(e) prices regulation should promote the efficient operation of airports;

(f) prices regulation should facilitate benchmarking comparisons between airports, competition in the provision of services within airports (especially protecting against discrimination in relation to small users and new entrants), and commercially negotiated outcomes in airport operations; and

(g) the Commission may recommend more effective forms of prices regulation than are currently in place, where this may be necessary.

As noted in chapter 4, in essence these principles (many of which mirror the Competition Principles Agreement) suggest that any future regulation should be the least required to target the source of any problem and promote efficient outcomes, while being applied in a way that fosters market outcomes where feasible, imposes minimal compliance costs on all parties, and promotes transparency and competition. Importantly, the terms of reference guide the Commission to recommend regulation only where it is necessary to promote efficient outcomes.

Developments since the draft report

As noted in chapter 1, on 5 October 2001, the Commonwealth Government announced major changes to airport price regulation in response to the effects on airports of both the terrorist attacks in the United States and the cessation of services by Australia's second-largest carrier, Ansett. The Minister for Financial Services and Regulation stated that the changes were 'consistent with the findings in the Productivity Commission's draft report' (Hockey 2001). He added that 'the Government will give further consideration to the prices oversight arrangements at airports in the light of developments in airport prices and the Productivity Commission's final report'.

12.2 The Commission's assessment of the need for regulation

The terms of reference require that regulation should be targeted only at those airports and those aeronautical services provided by airports where there is most potential to abuse market power.

The Commission considers that the four largest Australian airports — Sydney, Melbourne, Brisbane and Perth — have a high degree of market power in core aeronautical services and therefore warrant some form of airport-specific price regulation, additional to general third-party access and competition regulation. As discussed in chapter 11, these general provisions of the *Trade Practices Act 1974* (TP Act), while potentially regulating some terms and conditions (of declared services) and proscribing certain practices of firms with market power, would not regulate prices of aeronautical services *per se*.

The Commission is not convinced that Adelaide, Canberra or Darwin have substantial market power. In this respect they may be comparable to Cairns Airport (the sixth-largest in Australia, albeit State owned), which is not subject to any price

regulation. However, some form of monitoring may be appropriate for these airports, at least as a transitional measure.

Remaining core-regulated airports, because they appear to have much less market power, or because, given their size, the costs of regulation would far outweigh any potential benefits, should not be subject to any airport-specific economic regulation, including price or quality monitoring. (They would continue to be subject to the TP Act (as would all airports) and relevant provisions of the *Airports Act 1996*.)

For those airports with moderate to high market power, the Commission considers that, based on its assessment of various regulatory options in chapters 10 and 11, two types of regulation, incentive-based price caps and price monitoring, merit consideration. The choice essentially comes down to forms of regulation that best promote incentives for efficient outcomes. Of the stricter forms of price regulation, CPI-X price caps provide the best incentives but inevitably they bring significant risks of regulatory error. Given that airports face several commercial constraints and incentives that will moderate their behaviour, the Commission sees significant advantages in a more light-handed approach involving price monitoring. Therefore, two regulatory options are outlined, differentiated by their treatment of Sydney, Melbourne, Brisbane and Perth airports.

12.3 Option A: dual-till price caps

The stricter option essentially would continue the regulatory structure introduced on 5 October 2001. However, it proposes a different approach to the setting of price caps at the Phase 1 airports (Melbourne, Brisbane and Perth), designed to improve incentives for aeronautical investment and to reduce the need for ongoing regulatory intervention in investment decisions. Price monitoring arrangements would also be modified to reflect monitoring principles outlined in the Commission's concurrent *Review of the Prices Surveillance Act 1983* (PC 2001c). Under this option, price regulation at Sydney Airport would continue largely unchanged.

Option A: Melbourne, Brisbane and Perth airports

For Melbourne, Brisbane and Perth airports, an annual CPI-X price cap would be set for five years, complemented by price and quality monitoring.

The price cap would apply only to those aeronautical services in which the three airports have been assessed by the Commission as having a high degree of market power. Broadly speaking, this means all services designated as aeronautical services for the purposes of current price caps plus aircraft refuelling services (box 12.1).

However, some assets (such as landside roads) that are used for both aeronautical and non-aeronautical purposes will have to be apportioned between these activities.

Average prices allowed under price caps should broadly reflect the anticipated cost of efficiently providing regulated aeronautical services on a dual-till basis (box 12.2). In other words, unlike current price caps where inherited single-till prices are adjusted incrementally as new investment is put in place, the cap should correspond to anticipated efficient dual-till prices.

Box 12.1 Which airport services should be regulated?

The terms of reference stipulate that future prices regulation should be applied only to those aeronautical services (and those airports) where airport operators have most potential to abuse market power. Having assessed the degree of market power in the various services provided by airports, the Commission considers that if a system of price caps were retained then the caps should incorporate:

- *Aircraft movement services and facilities* — airside grounds, runways, taxiways, aprons; airfield lighting, airside roads, airside lighting; airside safety; nose-in guidance; aircraft parking; visual navigation aids; aircraft refuelling; and
- *Passenger processing services and facilities* — forward airline support areas; aerobridges, airside buses; departure lounges and holding lounges (*not* VIP and business lounges); immigration and customs services areas; public address systems, closed circuit surveillance systems, security systems; baggage make-up, baggage handling, baggage reclaim; public areas in terminals, public amenities, public lifts, escalators and moving walkways; flight information display systems; and landside roads.

Thus, apart from the inclusion of aircraft refuelling in the bundle 'aircraft movement services and facilities', there would be virtually no change from current regulatory coverage. However, some assets (for example, landside roads) would have to be apportioned between regulated and unregulated activities of the airport. The provision (and pricing) of taxi holding facilities that should relieve landside road congestion and the need for additional roadway, should not be subject to the price cap.

Some services (apart from aircraft refuelling) that currently are designated 'aeronautical related' — staff car parking, check-in counters and related facilities, and aircraft light and emergency maintenance sites — should continue to be subject to price monitoring but not a price cap. However, some other services currently designated as aeronautical related should not be subject to further monitoring: public car parks; freight equipment storage sites; freight facility sites and buildings; ground support equipment sites; and heavy maintenance sites and buildings.

Price caps would continue to be complemented by monitoring of the quality of regulated services (see details under Option B, section 12.4). Quality monitoring should identify any failure to invest appropriately on the part of airports. However,

planned investment incorporated in the price cap may also need to be monitored directly to ensure that projects are not being intentionally delayed by the airport. Airlines would be expected to play a role in developing the forward investment program to be incorporated within the price cap (ideally, in negotiation with airports) and their input should be sought in monitoring implementation of that program.

Box 12.2 Dual-till, replacement-cost price caps

Any price caps should be developed on a current-cost basis. They should incorporate the cost of required (optimised) aeronautical assets (including anticipated efficient capital expenditure) and anticipated efficient operating costs (with reference to productivity benchmarks where feasible) over the five-year regulatory period. In addition, they should be calculated on a dual-till basis. That is, assets used and profits earned in non-aeronautical activities should not be taken into account in determining allowable aeronautical prices.

Implementation of this current cost, dual-till approach would require both an assessment and revaluation of the aeronautical asset base. While historical costs may make for a simpler assessment, they are less likely to encourage efficient production and investment in this industry, especially where the current opportunity cost of significant assets is substantially above their historic cost (eg aeronautical land at Sydney Airport).

Capped prices at these airports would then be calculated on a broadly similar basis to current aeronautical prices at Sydney Airport (but with land appropriately valued). Moreover, whereas at Sydney prices were increased by around 100 per cent (from previous Federal Airports Corporation prices) in one step, any significant price changes could be phased in over the regulatory period via the X factors (appropriately adjusted for anticipated productivity and demand growth), to give airports and airport users time to adjust to the new basis for price setting.

With price caps calculated in this way, prices would not require adjustment for aeronautical investment foreseen and agreed to at the commencement of the regulatory period. However, there still may need to be provision for appropriate cost pass-through of large, unanticipated investments (and possible downward adjustment if planned investments do not proceed).

Price caps should continue to be calculated on a tariff-basket basis and hence allow price restructuring within the cap.

The Commission does not consider that setting price caps on a dual-till basis necessarily would deliver windfall gains (or losses) to airport operators. The outcome would depend on the expectations about future prices and regulation that were factored into operators' bids for the purchase of the leases.

Price monitoring of some services currently designated as 'aeronautical related', in which market power has been assessed as moderate (for example, check-in counters, staff car parking) would continue at these airports (box 12.1).

Option A: Sydney Airport

For reasons discussed in box 12.3 and appendixes F and H, in the absence of defined slot rights and trading mechanisms, regulation preferably should allow aeronautical prices at a capacity-constrained Sydney Airport to reflect more closely the opportunity costs incurred by airlines and their passengers in using the facility (that is, the value of slots to those who miss out at peak times), rather than simply reflecting the efficient costs of production.

At the very least, provided capacity remains constrained, aeronautical prices should not be required to decline in real terms and should be adequate to encourage efficient, feasible expansion of aeronautical capacity at that facility.

- This could be implemented either by requiring notification of aeronautical price increases above the CPI, or by imposing a CPI-X cap with the X set at zero.
- In either case, price increases should be allowed to reflect peak-period demand (as provided for in the current regulatory framework for Phase 1 airports), and to accommodate necessary investment.

Box 12.3 The benefits of price rationing at Sydney Airport

Prior to September 2001, Sydney Airport experienced excess demand for aircraft movement slots for several hours a day. This situation is likely to resume in the not-too-distant future. The limited supply of slots is currently due to a movement cap and curfew, and the regional 'ring fence'. It is likely that the market-clearing price at peak times exceeds airport production costs.

Appropriate peak/off-peak charges at Sydney Airport would promote more efficient use of the airport and, given the massive investment required to establish a second airport, also would provide important signals to the Government about the need for a new facility and the costs of the various constraints imposed on the use of Sydney Airport.

Though prices approaching market-clearing levels at peak times would be likely to promote use of the airport by those who value it most — even if ring-fenced regional flights were quarantined from such price increases, in line with announced Government policy — the airport could earn large profits, reflecting the scarcity value of slots. (Efficient peak/off-peak charging would balance lower off-peak charges against higher peak charges — this would tend to moderate the extent of profit increases.)

(Continued next page)

Box 12.3 (continued)

It is important to note that any rise in peak prices is unlikely to lead to higher passenger fares. There is strong evidence that the scarcity value of the slots is factored into fares already; it is very difficult to obtain discounted fares to Sydney at peak times. In other words, it is the airlines that are currently benefiting from the excess demand for landing slots at peak times.

If bidders were informed prior to the sale of Sydney Airport that efficient peak/off-peak charges would be permitted, then any anticipated scarcity rents would accrue to the Commonwealth Government (and taxpayers generally) in the bid price, rather than to the new airport operator.

Though there are strong efficiency arguments for pricing the use of slots to reflect the opportunity costs of using the facility, any decision also will be guided by potential effects of higher charges on airlines (to the extent that they forfeit scarcity rents), and on passengers unwilling to pay higher charges and who forfeit peak-period access. Services on some other routes also may be affected if average costs of these flights are being covered by higher airline yields on Sydney routes.

An alternative or complementary means of promoting efficient use of Sydney Airport would be to allow trading (and possibly auctioning) of slot rights — that is, rights to future airport access. The development of slot markets would require definition of the property rights attached to slots, including the scope for the airport to alter its charges.

Whatever the decision about appropriate future policy at Sydney Airport, for that policy to be factored adequately into the sale price (for the ultimate benefit of taxpayers), bidders must be given clear guidance about the regulatory framework that will apply to the airport. The need for such clarity is underscored by the uncertainty and disputation that have been associated with the lack of transparency and specificity of the current price-cap regime applying to the already privatised core-regulated airports.

Option A: other airports

Adelaide, Canberra and Darwin airports would be subject to modified price-monitoring arrangements (as outlined below in Option B, section 12.4) rather than price caps. Quality monitoring (also as outlined below) would continue at these airports.

For all other airports, there would be no airport-specific price regulation or quality monitoring. This would require amendment of the Airports Act so that Hobart, Launceston, Alice Springs, Coolangatta and Townsville airports no longer were designated as ‘core-regulated’ airports.

Option A: review and access provisions

An independent, public review would need to be conducted towards the end of the five-year period to ascertain, on the basis of that experience, whether there should be any future price regulation of price-capped and price-monitored airports. Other airports should be included in this review only where there is *prima facie* evidence of persistent misuse of market power. Proposed review guidelines are set out under Option B in section 12.4.

All airports, whether they are subject to price regulation or not, should be subject to the generic provisions of the National Access Regime (Part IIIA of the TP Act). An airport-specific access regime for price-regulated airports should be considered only if procedural improvements, such as scope for multilateral arbitrations recommended in the Commission's *Review of the National Access Regime* (PC 2001a), were not made to that regime (chapter 11).

12.4 Option B: price monitoring

Option B differs from Option A in that it would extend lighter-handed regulation to Sydney, Melbourne, Brisbane and Perth airports. Under Option B, prices at these airports would be monitored by the regulator, albeit with somewhat more detailed reporting requirements than for price-monitored Phase 2 airports.

Option B: Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports

Price monitoring

For Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports, there would be mandatory price monitoring by the ACCC. The monitoring regime would continue for five years.

- During this probationary period, the regulator would not have the power to alter unilaterally the monitoring regime or impose stricter price regulation.
- Information requirements would be specified at the commencement of the period and could not be amended without agreement of the parties. As outlined in box 12.4, the Commission envisages somewhat more detailed monitoring of Sydney, Melbourne, Brisbane and Perth airports (specifically, requiring reporting of the weighted average cost of capital (WACC) for aeronautical

assets). Otherwise, proposed information requirements for the seven airports broadly would be consistent with existing disclosure and reporting requirements.

- As under current monitoring and reporting arrangements, information would be formally audited. There also should be provision to treat some data as commercial-in-confidence where disclosure could undermine commercially-negotiated agreements. An annual report presenting monitored information (in a way that protects commercial-in-confidence material) would be made publicly available, with commentary (but not a pre-emptive assessment of the monitoring regime) by the ACCC (and auditors) where considered warranted.

Box 12.4 Option B: disclosure requirements for price-monitored airports

For Melbourne, Brisbane, Perth and Sydney airports, price monitoring of aeronautical services (classified in box 12.1 as *aircraft movement services and facilities* and *passenger processing services and facilities*) and selected aeronautical-related services (also outlined in box 12.1) would require:

- for each of these services, detailed information on:
  - the allocation of costs to the provision of the service; and
  - revenue, including the number of units supplied, the charge, the basis for charging, and total revenue derived.
- at an aggregate level, information on revenue, costs and profitability, comprising:
  - profit and loss account;
  - balance sheet;
  - cash flow statement;
  - expense allocations;
  - schedule of assets;
  - an estimate of the weighted average cost of capital (WACC); and
  - operational statistics, including information on passenger numbers and aircraft movements.

For other facilities and services provided by the airport operator (broadly speaking, non-aeronautical services), only aggregate information would be reported (the same as that for aeronautical services outlined above, except that WACC information would not be required). Detailed information for each service would not be required for services in this category.

For Adelaide, Canberra and Darwin airports, information requirements would be the same as for Sydney, Melbourne, Brisbane and Perth airports, except that WACC estimates would not be required for any monitored service.

Quality monitoring

Modified quality monitoring arrangements would continue at all price-monitored airports. The list of quality-monitored services should be reviewed to match those services subject to detailed price monitoring. Quality indicators also should be reviewed to ensure that the quality of monitored services is within the control of the airport operator (chapter 9). Public reporting by the ACCC of quality of service outcomes at airports would continue as part of the broader requirements for price monitoring.

Commercial agreements

Voluntary commercial agreements between airports and users (including non-airline users) would be encouraged by providing some guidance as to the form such agreements could take (chapter 11). For example, agreements should incorporate agreed price and service levels and/or quality of service provision undertakings (possibly with penalties for non-compliance); a commitment to the exchange of information; consultation procedures; and dispute-settlement mechanisms (for example, provision for independent arbitration).

Review criteria

An independent public review would need to be conducted towards the end of the five-year monitoring period to ascertain whether there should be any future price regulation of those airports. Other airports could be included in the review only where there is *prima facie* evidence of persistent misuse of market power.

- Factors to be taken into account by the review in assessing whether airports have abused market power should be specified at the start of the regulatory period. Suggested criteria are summarised in box 12.5. Efficient pricing principles for airports are discussed in chapter 4 and also have been developed more generally by the Commission in its reviews of the National Access Regime and Telecommunications Competition Regulation (PC 2001a and 2001d). They are predicated on the need to avoid excessive prices, without the regulator attempting to set prices too precisely, with the resultant risk that prices may be pushed too low and efficient investment discouraged.
- In line with these principles, at least at airports without significant peak periods, efficient prices broadly should generate revenue that is not significantly above the long-run costs of efficiently providing aeronautical services (on a stand-alone basis). At airports with significant capacity constraints, as discussed in box 12.3 and appendix H, efficient peak/off-peak prices may generate revenue that exceeds the production costs incurred by the airport. Price discrimination also

can promote efficiency — this may mean that some users pay a price above the long-run average costs of providing aeronautical services, while more price-sensitive users pay a price below it.

- Additional factors to be taken into account by the review would include whether quality has deteriorated or failed to meet the requirements of users; the extent to which commercial agreements have been negotiated; the level of consultation and exchange of information; and the level (and success) of applications for access and the number (and validity) of user complaints.

Box 12.5 The Commission's proposed review criteria

The proposed review of price regulation of airports to ascertain the need for continued regulation (if any) in five years time, should be guided by the following criteria.

Pricing principles

- At airports without significant capacity constraints, efficient prices broadly should generate expected revenue that is not significantly above the long-run costs of efficiently providing aeronautical services (on a dual-till basis). Prices should allow a return on (appropriately defined and valued) assets (including land) commensurate with the regulatory and commercial risks involved.
- At airports with significant capacity constraints, efficient peak/off-peak prices may generate revenues that exceed the production costs incurred by the airport.
- Price discrimination and multi-part pricing that promote efficient use of the airport should be encouraged. This may mean that some users pay a price above the long-run average costs of providing aeronautical services, whereas more price-sensitive users pay a price close to marginal cost.

Other criteria

- Whether quality-of-service outcomes have deteriorated and/or failed to meet the requirements of users.
- The extent to which commercial agreements on prices and quality of service have been negotiated.
- The degree of consultation with airport users and the extent of the exchange of information.
- The number and outcome of applications for third-party access and the extent and validity of user complaints.

Option B: Other provisions

For all other airports, there would be no airport-specific price regulation or quality-of-service monitoring. This would require amendment of the Airports Act so that

Hobart, Launceston, Alice Springs, Coolangatta and Townsville Airports no longer were designated as 'core-regulated' airports.

For all airports, access provisions (and provisions for access undertakings) should not differ from the generic provisions of the National Access Regime (Part IIIA of the TP Act). An airport-specific access regime should be considered only if procedural improvements, such as scope for multilateral arbitrations (as recommended by the Commission in its *Review of the National Access Regime* (PC 2001a)), are not made to that regime. The Commission sees no need to exempt from access regulation airports that enter into commercial agreements with users.

12.5 Weighing the options

Option A is superior to the existing regime

Option A would continue to apply price-cap regulation to those airports considered to have a high degree of market power. In addition, Option A would set price caps that broadly reflect costs of supplying aeronautical services on a stand-alone, rather than single-till, basis. For these reasons, Option A would, in the Commission's view, perform better than the regulatory arrangements in place before 5 October 2001 and those that have applied since then. In particular:

- by making allowance for anticipated investment in the price-cap parameters, it is likely that regulatory involvement in and, therefore, scope for distortion of, investment decisions will be reduced. In addition, airports and their users would receive much better signals from efficient dual-till prices regarding the real costs and benefits of supplying aeronautical services;
- airports and their customers would have greater incentives to negotiate price and quality agreements within the overall limits of the designated caps (at least where there is unused airport capacity), reflecting incentives to increase aeronautical and non-aeronautical profits by expanding use of the airport at the margin;
- the use of benchmarking, where feasible, could help to sustain the positive incentive effects of price caps and avoid them converging to rate-of-return regulation; and
- maximum average aeronautical prices at Melbourne, Brisbane and Perth airports would be set on a dual-till basis, consistent with prices allowed by the ACCC for Sydney Airport.

Price caps are not warranted

The Commission has not been persuaded, however, that there is a strong case for the continuation of price caps at *any* privatised core-regulated airports. This is for two principal reasons.

The first is the ever-present risk of regulatory failure, given the severe information problems confronting any regulator. Setting price caps inevitably entails detailed regulatory assessment of, and involvement in, airport operations and investment decisions. It should therefore be used only where the potential efficiency costs of abuse of market power are significant. Even then there is a risk that regulation will cause its own distortions to production and investment decisions. While the Commission agrees that some transitional problems with current price-cap arrangements may have been settled, and that the price caps proposed under Option A should reduce regulatory involvement in investment decisions, the risk of regulatory failure remains high. This risk has been amplified by the uncertainty that currently pervades global aviation markets.

The second and related reason is that the 'problem' to be addressed does not warrant such a heavy-handed regulatory regime. Though the four largest airports have considerable market power, the prospect of them using that power in a way that would generate significant costs to the economy or community is supported neither by the evidence nor the analysis. There are strong commercial incentives pulling in the other direction, including scope for increased profits in non-aeronautical activities from increasing passenger volumes, and incentives to discriminate and differentiate in pricing.

Option B provides more appropriate regulation

On balance, therefore, the Commission considers that while the undoubted market power of the four major airports warrants some form of regulatory constraint, the continuation of price caps is not the best approach. Option B offers a much better regulatory mechanism for promoting the principles for regulation identified in the terms of reference.

The ultimate objective — to ensure efficient long-term provision of airport services — is common to both options. In the Commission's view, Option B provides a greater chance that this objective will be achieved, by providing a better balance between regulatory constraint and promotion of commercial relationships.

While some participants have questioned whether commercial negotiations are feasible in this industry, the Commission notes that airlines deal directly with

numerous unregulated smaller airports, both privately- and publicly-owned, and some unregulated larger ones (for example, Cairns). Relations may not always be smooth, but there seems to be considerable scope for reasonable commercial interaction between airports and users, provided there is some ultimate constraint on abuse of any market power (which Option B provides, in addition to the TP Act).

By providing a credible threat that price controls could be reintroduced, enunciating principles of efficient pricing to guide airport behaviour, and imposing disclosure requirements, any tendency for airports to increase their charges beyond efficient levels should be constrained.

The Commission also draws attention to the continued relevance of third-party access provisions (Part IIIA) and Part IV of the TP Act to airports. The Commission does not consider that airports have strong incentives to deny or frustrate access in order to impede competition in a way that would be likely to lead to declaration of aeronautical facilities (at least under the modified declaration criteria recommended in the *Review of the National Access Regime* (PC 2001a)). Nonetheless, the potential activation of this mechanism does provide users with regulation of last resort, providing additional encouragement for airports to enter into reasonable agreements regarding prices and conditions of airport use.

Some participants expressed concern about the need for additional public scrutiny of any principles designed to guide airport behaviour. However, what the Commission is proposing (box 12.5) is not detailed prescription, but rather broad principles of efficient pricing that have been discussed extensively during this inquiry and parallel inquiries into infrastructure regulation (including reviews of the National Access Regime, the PS Act and Telecommunications Competition Regulation).

Some participants also cited their interpretation of the recent New Zealand experience with light-handed regulation in an attempt to rebut the Commission's price-monitoring option. But, closer examination reveals that the New Zealand system, notwithstanding some deficiencies, has *not* been a failure (chapter 11). For example, Auckland and Christchurch airports have agreed on new aeronautical prices with their major airline customers, and those price outcomes do not appear excessive.

While light-handed regulation currently is not the dominant model worldwide, there are signs that the direction is changing. For example, in the United Kingdom, the Civil Aviation Authority recently has proposed modifications to regulatory arrangements that are in part designed to foster commercial negotiation between airports and airlines at major airports.

The Commission recognises that its preferred option would involve a considerable shift from current arrangements at major airports — though one largely envisaged by the architects of the regulatory arrangements at the time of airport privatisations. The Commission also recognises that some parties may find such a change difficult, particularly given the long history of government provision of airport services at major airports, and pricing structures that have effectively subsidised aeronautical charges. Nonetheless, even if price caps were to be maintained (in any form), aeronautical charges would still need to rise to encourage efficient long-run service provision.

The Commission considers that the full benefits of privatisation of airports are unlikely to be realised if commercial relationships between airports and airlines continue to be heavily conditioned by intrusive price regulation. The ongoing need for substantial investments at major airports requires a more commercial and cooperative approach. The potential for regulation unduly to constrain prices poses a real risk and one that could impose significant costs on consumers in the future.

The Commission emphasises that it is not advocating *de*regulation of major airports. It is proposing a probationary regulatory package designed to facilitate the transition to a more commercial environment, while providing credible constraints on the use of market power by these airports.

Whether or not the Commission's preferred option is adopted, it is essential that, prior to implementation of the chosen regulatory approach, parties are consulted on the practicalities of proposed regulation and made aware of the various requirements, in order to reduce uncertainty and the potential for disputation. In particular, bidders for Sydney Airport should have a clear picture of the regulatory framework for that facility, so that expected future airport charges can be factored adequately into the sale price.

Recommendations 1–8 should be read in conjunction with Options A and B which are set out in this chapter.

RECOMMENDATION 12.1

For Sydney, Melbourne, Brisbane and Perth airports, price caps and prices notification arrangements should be replaced by mandatory price monitoring arrangements for a probationary five-year period, as outlined in Option B.

- ***Airport-specific price-monitoring arrangements could be incorporated either in the* Airports Act 1996 *(Airports Act) or the* Trade Practices Act 1974 *(TP Act), but should be consistent with any generic price-monitoring provisions that may be introduced into the TP Act following the Commission's separate review of the* Prices Surveillance Act 1983 *(PS Act).***

In the event that the Government opted for a stricter form of price regulation at these four airports, Option A should apply such that:

- ***annual price caps of the form CPI-X continue for five years at Melbourne, Brisbane and Perth airports. Price caps should be set to reflect the efficient costs of providing aeronautical services in the long run, on a dual-till basis. Price caps should be complemented by price monitoring of some 'aeronautical-related' services; and***
- ***for a capacity-constrained Sydney Airport, prices should not be required to fall in real terms. Regulation should comprise either prices notification or a price cap of the form CPI-X, with X set at zero. Price increases should be allowed to reflect peak-period demand and to accommodate necessary investment.***

RECOMMENDATION 12.2

For Adelaide, Canberra and Darwin airports, mandatory price monitoring of aeronautical services and some 'aeronautical-related' services (as outlined under Option B) should continue for five years. (Airport-specific price-monitoring arrangements could be incorporated either in the Airports Act or the TP Act, but should be consistent with any generic price-monitoring provisions that may be introduced into the TP Act following the Commission's separate review of the PS Act.)

RECOMMENDATION 12.3

Quality monitoring of regulated services (as outlined under Option B) should continue at all airports subject to price regulation; that is, at Sydney, Melbourne, Brisbane, Perth, Adelaide, Canberra and Darwin airports.

RECOMMENDATION 12.4

Neither price monitoring nor price caps should be reintroduced for Alice Springs, Coolangatta, Hobart, Launceston and Townsville airports. The Airports Act should be amended so that these airports are no longer designated as 'core-regulated' airports.

RECOMMENDATION 12.5

Commercial agreements should be encouraged and assisted (for example, by providing guidelines regarding coverage) under price-monitoring arrangements, or price caps, if they were retained at some airports.

RECOMMENDATION 12.6

Price regulation of airports should be reviewed towards the end of the five-year regulatory period. The review should be independent and public. Its objective

should be to ascertain the need for any future price regulation of airports (including price monitoring or more stringent price regulation). In making its assessment, the review should be guided by principles of efficient pricing plus several other criteria set out under Option B. Agreed review criteria should be spelt out at the beginning of the regulatory period.

Other airports should be included in the review only where there was* prima facie *evidence of persistent misuse of market power (namely, evidence of inefficient prices, poor quality etc).

RECOMMENDATION 12.7

All airports should be subject to the generic provisions of the National Access Regime in Part IIIA of the TP Act. An airport-specific access regime should be considered only if procedural improvements, such as scope for multilateral arbitrations, are not made to the National Access Regime.

RECOMMENDATION 12.8

Prior to implementation of the chosen regulatory approach, airports and airlines should be consulted on the practicalities of the proposed regulation and made aware of its various requirements, in order to reduce uncertainty and the potential for disputation. In particular, bidders for Sydney Airport should have a clear picture of the regulatory framework for that facility so that expected future airport charges can be factored adequately into the sale price.

APPENDIXES

A Terms of reference: correspondence

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Melbourne VIC 8003
Telephone 03 9653 2100
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Canberra Office
Telephone 02 6240 3200
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PRODUCTIVITY COMMISSION
From the Chairman's Office

15 February 2001

Senator the Hon Rod Kemp
Assistant Treasurer
Suite MF22 Parliament House
Canberra ACT 2000

Dear Minister

Re: **Productivity Commission Inquiry into Prices Regulation of Airports**

As you know, the Commission is still at a very early stage of its Inquiry into Prices Regulation of Airports. However, following consultations with participants, a matter has arisen such that I am seeking clarification of part of the Terms of Reference received by the Commission on 21 December 2000.

Under Paragraph 7 of the Terms of Reference, the Commission is asked to report on whether there is a need for prices regulation of airports, and the appropriate form of any prices regulation, taking into account a number of principles, the first of which states:

(a) the CPI-X price cap applied to aeronautical charges during the first five-year period of private ownership will no longer operate.

The Commission understands that Paragraph 7(a) essentially conveys the Government's intention that the current price cap arrangements for Phase I and II airports will cease after five years of operation. It is also our view that paragraph 7(a) is not intended to preclude from consideration price cap arrangements of the general form of CPI-X as an option for future prices regulation of airport services, should some form of prices regulation be regarded as appropriate.

Your confirmation that this general approach to prices regulation can be considered in this Inquiry as one of a range of options where there is most potential for abuse of market power, would be appreciated. In view of the present uncertainty, we would need to communicate to participants your clarification of this matter.

Yours sincerely

Gary Banks

ASSISTANT TREASURER
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20 APR 2001

Mr Gary Banks
Chairman
Productivity Commission
Level 28, 35 Collins Street
MELBOURNE VIC 3000

Dear Mr Banks

Re: **Productivity Commission Inquiry into Prices Regulation of Airports**

Thank you for your letter of 15 February 2001, seeking clarification of part of the Terms of Reference provided to the Commission on 21 December 2000.

Your understanding, that Paragraph 7(a) essentially conveys the Government's intention that the current price cap arrangements for Phase I and II airports will cease after five years of operation, is correct. Paragraph 7(a) is not intended to limit the Commission's options for future prices regulation of airport services, should the Commission's inquiry find that some form of prices regulation is appropriate. Price cap arrangements of the general form of CPI-X can be considered by the PC, as one of a range of for future prices regulation of airport services, should they be considered necessary.

I trust that this clarifies the matter for you.

Yours sincerely

ROD KEMP

B Public consultation

B.1 List of submissions

Participant	*Submission no.*
Adelaide Airport Limited	20, DR57, DR77
Aero-Tropics Air Services	3
Airports Council International	DR65
AMP Henderson	10
Ansett Australia/Air New Zealand	42
Australian Airports (Townsville) Pty Ltd	14
Australian Airports Association	15, DR51, DR69
Australian Competition and Consumer Commission	36, 38, 49, DR55
Australian Council for Infrastructure Development	28
Australian Taxi Industry Association	4, DR61
Board of Airline Representatives of Australia Inc	26, 41, DR53, DR54, DR72
Brisbane Airport Corporation Limited	8, 44, DR73
Capital Airport Group	32, 45, 46, 47, DR52, DR60, DR75, DR76
CEO Collegiate Pty Ltd	DR59
Department of Industry, Science and Resources	40
Department of Infrastructure, Planning and Environment (NT)	DR78
Department of State and Regional Development (Vic)	23, DR70
Department of Tourism, Racing and Fair Trading (Qld)	6
Department of Transport and Regional Services	39
Department of Transport and Works (NT)	24
Forsyth, Professor Peter	5
Gold Coast Airport Limited	16, DR58
Hastings Funds Management	19
Hobart International Airport Ltd	11
Impulse Airlines	18
International Air Transport Association	9, 43, DR56
Launceston Airport	35
Lewis, Peter	1

Major, Hugh	DR79
Melbourne Airport	7, 37, DR66
MTAA Superannuation Fund Pty Ltd	22, 34, DR67
Northern Territory Airports Pty Ltd	25, 50, DR71
Perth Airports Municipalities Group	12
Qantas Airways Limited	48
Queensland Transport	31
Regional Aviation Association of Australia	DR64
Scott-Bloxam, W.H.	2
Shell Australia	DR63
South Australian Government	33
Stott, Donald	29
Sydney Airports Corporation Limited	27, DR62
Tourism Tasmania	13
Victorian Hire Car Association	DR68
Virgin Blue	30, DR74
Western Australian Government	17
Westralia Airports Corporation Pty Ltd	21

B.2 Visits

Adelaide Airport Limited
Airport Co-ordination Australia
Airservices Australia
AMP Henderson
Ansett Australia
Australian Airports Association
Australian Competition and Consumer Commission
Australian Federation of International Forwarders
Australia Pacific Airports Corporation
Board of Airline Representatives of Australia Inc
Brisbane Airport Corporation Limited
Bureau of Transport Economics
Cairns Port Authority
Capital Airport Group
Commerce Commission (New Zealand)
Department of the Treasury (Cwlth)

Department of Transport (NSW)
Department of Transport and Regional Services (Cwlth)
Impulse Airlines
New South Wales Treasury
OECD (Secretariat Competition Policy)
Office of Asset Sales and IT Outsourcing
Qantas Airways Limited
Queensland Transport
Regional Airlines Association of Australia
Sydney Airports Corporation Limited
The Cabinet Office (NSW)
Virgin Blue

B.3 Public hearing participants

Initial public hearings

Sydney, 26 March 2001

Australian Airports (Townsville) Pty Ltd
Australian Taxi Industry Association
Impulse Airlines

Melbourne, 2–4 April 2001

Adelaide Airport Limited
Ansett Australia
Australian Airports Association
Australian Council for Infrastructure Development
Australia Pacific Airports Corporation
Board of Airline Representatives of Australia Inc
Brisbane Airport Corporation Limited
Capital Airport Group
Gold Coast Airport
Hobart International Airport Ltd
MTAA Superannuation Fund Pty Ltd

Northern Territory Airports Pty Ltd
Professor Peter Forsyth
Qantas Airways Limited
Sydney Airports Corporation Limited
Virgin Blue
Western Australian Government
Westralia Airports Corporation Pty Ltd

Draft report public hearings

Melbourne, 17–18 October 2001

Adelaide Airport Limited
Australian Airports Association
Australia Pacific Airports Corporation
Australian Taxi Industry Association
Board of Airline Representatives of Australia Inc
Brisbane Airport Corporation Limited
Capital Airport Group
Gold Coast Airport
MTAA Superannuation Fund Pty Ltd
Northern Territory Airports Pty Ltd
Qantas Airways Limited
Sydney Airports Corporation Limited
Westralia Airports Corporation

C Aeronautical and non-aeronautical services

This appendix explores some conceptual issues arising from the complementary provision of aeronautical and non-aeronautical services at most major airports, specifically:

- implications for pricing of aeronautical services;
- the distinction between locational rents and monopoly profits; and
- arguments for and against 'single-till' regulation.

The implications of non-aeronautical earnings for aeronautical prices at Australian airports are discussed in detail in chapter 7. The Commission's assessment of single- and dual-till issues is presented in chapter 10.

C.1 The effect of non-aeronautical profits on aeronautical charges

As noted in chapter 2, in 1999-00, all core-regulated airports in Australia, except Coolangatta, earned more revenue from so-called non-aeronautical activities (essentially property and retail activities from which airports receive rental and/or royalty payments) than from the provision of aeronautical services. While these commercial services typically complement the core aeronautical services provided by the airport,[1] they do not have to be consumed as part of the core 'bundle' of aeronautical services. For example, as discussed in chapter 6, international passengers can choose where they buy duty-free goods (and whether they buy duty free at all); airlines can choose where to locate maintenance facilities and so on.

Despite this competition, it would appear, for most core-regulated airports, that the profitability of non-aeronautical services exceeds that of aeronautical activities. The report prepared for the ACCC by KPMG (sub. 36, attachment A) provides some evidence that this result is not attributable to arbitrary allocation of costs across the two categories.

1 Not all services are complementary, however. As noted in chapter 2, some airports are developing business parks that appear as dependent on local business as on the airport.

The current imbalance in profitability may reflect regulation of aeronautical charges. In the absence of price-cap regulation, airports may raise aeronautical charges and their profits from this sector.[2]

Whatever the 'stand-alone' profit-maximising level of aeronautical charges, if airports are able to earn additional profits from non-aeronautical goods and services provided at the airport, they will have an incentive to reduce the (unregulated) prices of aeronautical services below the level that would apply without the non-aeronautical profit. This result holds provided the demand for aeronautical services responds to changes in their price.

The other key requirement is that the demand for non-aeronautical services (and hence profits from these activities) flows directly from consumption of aeronautical services, not the other way around. This condition appears to be met at airports. It is unlikely that people primarily visit an airport to shop and decide to take a flight while they are there. As Kahn notes:

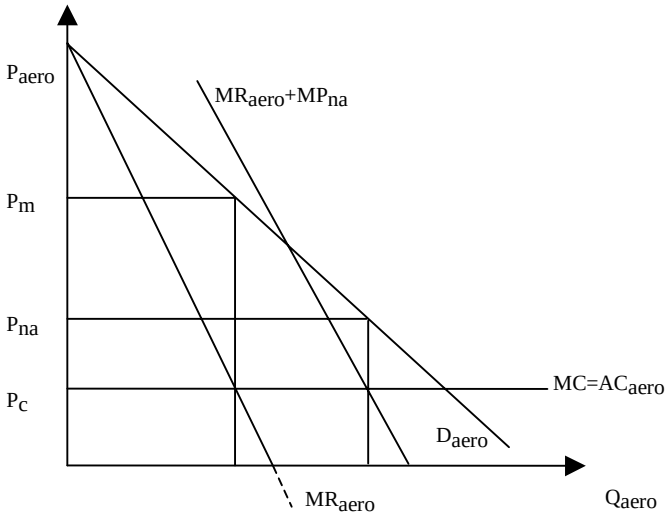
> The critical condition for such a cross-subsidization (pricing one of the complementary products below its separate incremental cost) is that the cross-elasticity of demand for the complementary service be high enough to compensate for the out-of-pocket losses on the sales of the first of these, considered in isolation. (Kahn 2001a, p. 17)

Figure C.1 illustrates the possibility. The diagram is a modified version of Starkie's (2001c) exposition. The figure shows a stylised price of, and demand for, aeronautical services (eg for landings or use of terminal facilities) at an airport. As drawn, the demand curve is downward-sloping and therefore assumes that the airport has some market power. For simplicity, marginal (and average) costs of providing these facilities are assumed to be equal and constant.

The efficient, economic welfare-maximising price for aeronautical services is P_c. An unregulated, profit-maximising airport, in the absence of non-aeronautical profits, would set the price for aeronautical services at P_m (assuming price discrimination is not feasible), at which price marginal revenue equals marginal cost.

2 This could result from airports using their market power to push prices above efficient levels or it may just be that current charges are below levels consistent with cost-recovery and therefore would rise even in the absence of market power (chapter 8).

Figure C.1 **Aeronautical pricing with non-aeronautical profits**



The constructed line $MR_{aero}+MP_{na}$ combines marginal revenue from aeronautical services and marginal profits (marginal revenue minus marginal costs) from the provision of non-aeronautical services. Again for simplicity, marginal profits from non-aeronautical activities are assumed constant per aircraft movement (and hence $MR_{aero}+MP_{na}$ is drawn parallel to the MR_{aero} curve).

The rationale for this is that a profit-maximising airport, in setting aeronautical prices, will take into account all additional profits that flow to it from attracting an additional user of its aeronautical facilities. The price of aeronautical services now will be set where $MR_{aero}+MP_{na}$ intersects the MC_{aero} curve — that is, at P_{na}. As drawn, this price still exceeds the efficient price, P_c, though it is feasible, if non-aeronautical marginal profits are large, and demand for aeronautical services is not highly inelastic, that unconstrained airport pricing could result in aeronautical charges below their average cost. (Indeed, they could be negative.) While the airport forfeits profits from aeronautical activities due to the reduction in their price, this loss is more than compensated for by additional profits from non-aeronautical activities. This expansion of passenger throughput will continue until the marginal profit forgone from aeronautical activities equals the marginal profit earned from non-aeronautical activities.

In other words, where users of aeronautical services have complementary demands for non-aeronautical services, a profit-maximising airport will have an incentive to attract more customers to the airport by reducing its aeronautical charges. How large the (absolute) reduction in the price of aeronautical services will be is an empirical matter, depending on the marginal profitability of non-aeronautical activities.

For capacity-constrained airports where increased aircraft throughput is not feasible, or for those airports where the demand for aeronautical services is insensitive to price, or where non-aeronautical activities are not profitable at the margin, or are profitable but are not linked to increased aeronautical traffic, prices for aeronautical services will be set on a 'stand-alone' basis.

It is possible, even where demand and profit increases are feasible, that prices will not be reduced for *all* users of aeronautical facilities. Airports (with excess capacity) have an incentive to target price discounts at marginal, or more price sensitive, airlines and passengers, especially those who contribute more to non-aeronautical profits (eg international passengers).

In addition, an airport may seek to encourage traffic growth by expanding capacity (at a given price) or encourage passenger spending by improving airport quality rather than by explicitly reducing aeronautical prices. The mix of incentives selected will depend on the marginal consumer being targeted. Additional flights or a new airline may be encouraged by rebates or discounts on aeronautical charges, marketing assistance or the provision of additional facilities. Passenger spending may be encouraged by the provision of attractive terminals and quick processing.

Additional airport profits from related non-aeronautical activities may also augment airlines' bargaining power: the potential loss of airport profits will be greater for any threatened reduction in services by airlines.

C.2 Non-aeronautical profits: locational rents and/or market power?

The above analysis rests on the assumption that non-aeronautical activities generate pure profits to the airport — that is, profits in excess of rates of return necessary to maintain supply of the good or service. The existence of such profits may suggest that any reduction in prices of aeronautical services (and a consequent reduction in the monopoly deadweight loss caused by pricing above marginal cost) largely would be offset by increased prices (and associated efficiency losses) in the provision of non-aeronautical services.

However, non-aeronautical profits may reflect economic rent accruing to location rather than market power *per se*. Economic rent is the payment made to a factor above that needed to keep it in its current use. If a factor has some alternative uses, then at the margin, it may earn no rent (with payment to the factor just reflecting its value in an alternative use), though it may earn infra-marginal economic rent.

Airports typically act as landlords to providers of retail services, maintenance facilities, etc. Airport revenue from these activities accrues as rentals and/or royalties to the scarce factor — in this case, designated airport land — which core-regulated airports, in turn, lease from the owner, the Commonwealth Government.[3]

Provided airports do not constrain artificially the provision of space for non-aeronautical facilities, profits earned from providing such space will reflect locational rents. These rents in turn reflect the inherent scarcity of land proximate and convenient to airside activities at an airport. An airport's ability to raise prices through artificial scarcity will be constrained by the ability of concessionaires to locate, and consumers to purchase, elsewhere. For example, any monopoly profits (that is, in excess of locational rents) earned from car parking are likely to encourage off-airport providers and substitution by airport users to other travel modes.[4] Monopoly retail rentals would drive concessionaires to relocate because uncompetitive rentals cannot be passed on to consumers (who, in turn, have a range of choices of where to buy these goods and services).

Importantly, if profits from non-aeronautical services reflect only locational rents, then they generate no efficiency loss. At the margin, the rental paid for land used in a particular non-aeronautical service will reflect the opportunity cost of *not* using that land to provide the highest-valued, alternative, competitive, non-aeronautical activity.

Moreover, intervention that discourages such rents being earned unambiguously will reduce welfare because scarce resources will not be allocated to their highest-valued use. Economic surplus will be forfeited. This result contrasts with the potential for intervention aimed at reducing monopoly profits to enhance welfare. This is because monopoly profits are transfers from consumers to the monopolist that may be brought about by an inefficient level of supply to the market.

C.3 Arguments for and against a single till

Privatised core-regulated airports in Australia have been regulated on a so-called dual-till basis. Under a dual till, for regulatory purposes, airport services are divided into two tills covering aeronautical and non-aeronautical services. Only those *aeronautical* services in which the airport is considered likely to have most market

3 Some airport operators also may just be very good at developing profitable ventures at airports. In this case it may be expected that skilled personnel would retain a reasonable share of any quasi-rents in the form of higher remuneration.

4 However, the airport's control over 'front-door' access may allow it to influence competition from off-airport car-park providers and other travel modes (chapters 6 and 7).

power are then regulated under price caps. Airports are free to set rentals and prices for retail and other non-aeronautical activities. Car-park prices have been monitored by the ACCC (chapter 3) but car-parking revenue has not been taken into account when setting the price caps.

This contrasts with the single-till regulatory arrangements for major airports in the United Kingdom, where revenues from non-aeronautical services are subtracted from expected airport-wide costs to determine allowable revenue from aeronautical services (appendix G). A similar system was used to set aeronautical charges at Federal Airports Corporation-operated airports prior to privatisation — aeronautical charges covered residual capital and operating costs (plus a real rate of return on capital) after taking into account projected revenues from non-aeronautical activities.

The ACCC's draft decision on proposed price increases at Sydney Airport (ACCC 2001h) suggested a limited single till (though described as a 'modified dual till') that would have transferred around $20 million of annual car-parking and other 'aeronautical-related' revenue to reduce 'stand-alone', cost-based aeronautical charges.

Privatised core-regulated airports appear to have been sold on the basis that a single till would 'not be mandated', and the Commonwealth Government, in April 2001, directed the ACCC to implement a dual till at Sydney Airport (Direction No. 22). But, as outlined in chapter 10, several participants (Board of Airline Representatives of Australia (BARA), Ansett and Qantas; subs 41, 42 and 48) argued in favour of airport price regulation on a full or partial single-till basis on the grounds that efficient pricing requires it.

Arguments for a single till

Market power in non-aeronautical services?

One argument put for a single till is that profits earned in non-aeronautical activities reflect market power rather than economic (locational) rent. If this were the case, then the single till may not prevent excessive pricing of non-aeronautical services by airports. It merely would require that monopoly profits earned in non-aeronautical activities were transferred to airlines and their passengers. However, the single till could remove the incentive to earn these profits. This would be a desirable, if unintended, consequence of a single till. If prices of non-aeronautical services reflected market power, it may be more appropriate to reduce them directly to promote efficient consumption and to protect consumers of the service.

Producers in competitive markets do not retain rents

BARA, Ansett and Qantas (subs 41, 42 and 48) argued that efficient pricing of airports requires that any locational rents earned from non-aeronautical activities by airports should be applied to reduce aeronautical charges. BARA demonstrated that if there were two identical airports (including, it must be assumed, with respect to the relative attractiveness of their location), then competition for customers would ensure that both airports earned normal profits. BARA is correct that if there were no scarcity in the supply of any factor used in the production of airport services (and no natural monopoly characteristics), long-run supply would be perfectly elastic. Consequently, there would be no producer surplus (rent) earned on infra-marginal units.

BARA (sub. DR54) cited the example of petrol stations that combine petrol retailing with convenience outlets. In this industry, competition will drive down the price of petrol such that any rents earned in the related retailing activity are competed away. If there is no scarcity of any factor, then rents will not be earned in the first place — that is, the price of petrol will decline only if the petrol/convenience store combination reduces the cost of selling petrol. However, if some petrol stations are more conveniently located than others and attract more customers to their convenience stores, rents will be earned at these stores that will not be bid away (unless another petrol station can open in the same location). Therefore, even in highly-competitive industries, price-taking producers in relatively high-yield locations (whether because of convenience or natural phenomena) will earn and retain locational rents.[5]

In the case of airports, natural monopoly characteristics mean that there is only one major regular public transport airport in each Australian capital city. This, in turn, means that airport land that can be used to provide a range of non-aeronautical activities (albeit complementary with aeronautical services), is scarce. (It may be the case, if airport services could be supplied by large numbers of providers in any location, that airport land would not be scarce. The reality is different, however. Airport services are not supplied (efficiently) by a highly-competitive market.) *Given this scarcity*, locational rents can be earned. As in any market where there is a scarce factor, there does not appear to be any reason on efficiency grounds that scarcity rents should accrue to consumers. Indeed, as discussed below, preventing returns to owner-operators that reflect scarcity may discourage optimal use of the scarce factor of production.

5 Generally, the rents will accrue to the original owner/exploiter of the site's value. Those who subsequently buy the site will pay the discounted, capitalised value of anticipated rents in the sale price.

As the UK Civil Aviation Authority noted:

> Given the cost structure of airports and the diverse services which they provide … it is unlikely that the provision of airport services would be perfectly competitive … Moreover, given that capacity constraints are the key issue for the industry, this characterisation assumes that scarcity rents which follow from planning restrictions should necessarily be clawed back by the regulatory regime. This has not occurred in the case of supermarkets … or in other markets where scarcity rents exist … (CAA 2000f, pp. 11–12)

Demand complementarities

Demand complementarities between aeronautical and non-aeronautical services provide a related rationale for a single till. The argument is that airlines deliver passengers who generate non-aeronautical profits to the airport and these additional profits should be factored into (lower) aeronautical prices. In other words, without airlines, airports would not earn locational rents. However, who 'deserves' the rents generally will be addressed adequately by the market itself. As discussed in section C.1, an airport will have an incentive to encourage additional services and passengers to increase its profits to the extent such complementarities exist. It does not appear necessary to regulate to ensure such behaviour.

Common costs

Another argument for a single till is that a multi-product monopoly (with large fixed common costs and a requirement to be (just) self-financing) should be encouraged to set prices to minimise efficiency losses — that is, to implement Ramsey pricing (Crew and Kleindorfer 2001). Generally, this means that markets/customers with relatively inelastic demand should bear a greater share of common, fixed costs than do those with more elastic demand.

In this vein, the Motor Trades Association of Australia Superannuation Fund (sub. 22), while arguing against the need for price regulation of airports, suggested that if price caps were imposed, a single till would promote greater pricing efficiency compared with a dual till. BARA made a similar argument in the context of its option for rate-of-return regulation across all airport services (sub. DR54).

This argument appears to rest on two assumptions — namely, that there are significant common costs in supplying aeronautical and non-aeronautical services, and that demand for non-aeronautical services is less elastic than demand for aeronautical services. If these assumptions hold, common costs could be covered more efficiently by increasing the prices of non-aeronautical services relative to those of aeronautical services. However, the extent of common costs in the

provision of aeronautical and non-aeronautical services appears limited. There may be some shared terminal costs but even in this instance, costs are likely to be separable. In addition, for those non-aeronautical services sold in competitive markets (chapter 6), prices cannot be raised above market prices (which, in competitive markets, will reflect the marginal cost of supply).

The ACCC compared opposing arguments of Kahn, and Crew and Kleindorfer, on this point:

> Professor Kahn argues that the apparently high returns accruing to airport operators from retail services is related to the locational advantage of the airport. Implicit in this argument is the point that SACL's monopoly market power does not extend beyond those services defined as aeronautical. By contrast, Professors Crew and Kleindorfer explicitly state that SACL's proposal 'develops a multi-till approach to price regulation, but this proposed approach leads to a number of problems, not least of which is that it allows non-aeronautical services to be priced at monopoly levels'.
>
> For the reasons outlined above, the Commission [ACCC] agrees with Professor Kahn that the dual till is in general a superior approach to aeronautical pricing, provided the services defined as aeronautical include all those in which the airport operator has significant market power. (sub. 36, p. 74)

Using infra-marginal locational rents to promote marginal-cost pricing of aeronautical services

It is possible that, in principle, *infra-marginal* locational rents earned in non-aeronautical activities could be extracted without affecting the efficient provision of those services. This raises the question of whether appropriation of locational rents earned on airport land to push down prices for aeronautical activities is likely to improve economic efficiency. It also raises the question of whether single-till regulation, in practice, is likely to effect such a transfer in a non-distorting way.

Several issues are relevant.

- If provision of aeronautical services involves economies of scale such that average costs exceed marginal costs, the break-even price will exceed the first-best level for efficient use of that airport (where price equals marginal cost). An appropriate subsidy could achieve efficient pricing but the deadweight costs of raising a tax to pay for the subsidy (essentially the disincentive effects of taxation) must be weighed against the efficiency gain in aeronautical services.
- In theory, economic or locational rent can be 'taxed' without distorting behaviour (a non-distorting, 'lump-sum' tax). In practice, single-till arrangements typically are applied in a way that distorts incentives to earn locational rents. If airport operators know *ex ante* that they will not retain additional locational rents earned in non-aeronautical activities (eg because rents

earned above an allowed rate of return are transferred to reduce aeronautical prices), they are unlikely to expend a great deal of effort allocating available airport land to its highest-valued non-aeronautical use. They may charge low rentals to existing concessionaires. These concessionaires would then capture the locational rents. Low rentals offered by the airport also could encourage rent-seeking by prospective tenants which would dissipate at least some of the rents. Alternatively, airport operators may allow their reported costs of supplying non-aeronautical services to rise to disguise profits.

- It could be feasible to devise a system whereby rents were shared with aeronautical users and which did not distort the airport operator's incentive to earn additional rents. However, such an arrangement would need to be agreed upon and not altered unilaterally by the regulator if, for example, rents increased. Under the UK single-till model, airport operators have some incentives to earn additional locational rents within the five-year price-cap period, but they also know that any additional profits in the current regulatory period may affect revenue forecasts in the setting of price caps in future periods. Importantly, as discussed below, buyers of airport leases at core-regulated airports in Australia paid up-front for 'commercial opportunities'. In one sense they have paid a once-off tax reflecting anticipated locational rents. Alternatively, prospective buyers could have made bids on the basis of paying annual lease payments or royalties to the Commonwealth.
- A single till appropriates rents earned from non-aeronautical activities located on airport land. This could create an incentive for airport operators effectively to 'shrink' the airport boundaries, capitalising non-aeronautical operations, locating commercial activities off-airport or engaging in activities that yielded locational rents but that were only indirectly related to airport activities (eg business parks). As noted above, to the extent that any locational rents are forgone (that is, not earned), this would represent an efficiency loss. A similar distortion may have been created if the draft ACCC (2001h) proposal to offset roughly $20 million of (mainly) annual car-parking revenue at Sydney Airport against aeronautical charges had been implemented. In this instance, the locational rent accruing to the airport from one activity (car parking) would have fallen, possibly creating an incentive for the airport to develop other activities on land that otherwise may have been used, more efficiently, for car parking.[6]

6 This assumes that the marginal locational rent flowing from car parking is not inflated by any market power in that activity. That is, the rent received does not exceed the marginal rent forgone from not using the land in the next-best, alternative (competitive) use.

- Some rents may reflect an airport owner/operator's entrepreneurial rather than locational advantage. Appropriation of rents from this source could encourage these operators to move to activities where rents were not taxed as heavily.[7]
- Reducing aeronautical charges can promote efficiency only if stand-alone aeronautical prices exceed their marginal cost. As discussed above, it is possible that an airport, internalising complementary demands for non-aeronautical services, voluntarily sets aeronautical prices for marginal customers close (or at least closer) to marginal cost. Airports may also charge in such a way that marginal consumers are not deterred from using the facility (via some form of discriminatory pricing). In both cases, the efficiency argument for single-till pricing is weakened.
- Alternatively, marginal costs may exceed average costs, for example, as a result of capacity constraints or decreasing returns to scale at airports. If an airport is already experiencing excess demand (that is, charges are below market-clearing levels), then as noted by Kahn (2001a), lower aeronautical prices largely will redistribute profits from airports to airlines — fares will not fall (for there will be no incentive for airlines to reduce fares below market-clearing levels), so airline profits will rise.[8] With prices below market-clearing levels, limited capacity will have to be rationed by a non-price mechanism which, almost inevitably, will incur efficiency costs.[9]
- In effect, single-till regulation can impose incentives similar to those of cost-based regulation on non-aeronautical activities. One possible result — as for most cost-based regulation — is that airports will have an incentive to inflate the costs of non-aeronautical activities to reduce measured profits, with consequent losses of productive efficiency. It also could lead to a perverse situation where aeronautical activities effectively subsidised inefficient expansion of non-aeronautical activities (eg if airports undertook inefficient investment in retail facilities to increase costs and reduce non-aeronautical returns on assets). (Starkie and Yarrow 2000)

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7 In the economy as a whole, rents are taxed via capital gains and income taxes. The single till, in the limit, imposes a 100 per cent tax on rents.

8 The ACCC (sub. 36) appeared to reject this argument, at least in relation to Sydney Airport, on the basis that there is scope for inter-airline competition. While this potential exists, at peak times when slots are fully allocated, airlines are unlikely to initiate a discount war for peak traffic. This is unlikely because the scope for a more efficient airline to increase market share is limited by the slot allocation scheme — a more efficient airline, officially, cannot buy extra slots. In other words, airlines are unlikely to compete on price among each other for additional customers who, without an additional slot, they cannot carry (appendix H).

9 Even in the (unlikely) event that a non-price rationing scheme allocates capacity to those who value it most highly, administration of the scheme will not be costless and wasteful rent-seeking is likely to be encouraged (appendix H).

- In the case of privatised core-regulated Australian airports, an additional complication would arise from introduction of a single till. These airports appear to have paid for the rights to exploit commercial opportunities on airport land (as the result of a competitive bidding process) and the land-owner (the Commonwealth Government) largely has captured expected (infra-marginal) locational rents already.[10] In this sense, some or all of the locational rents earned by airports are not pure profits. If these rents were redistributed to airlines and/or their customers, then airports would be likely to suffer large capital losses. Changing the rules could also raise concerns about sovereign risk for future investors in airports and possibly other regulated activities.

In sum, where the airport has little or no market power in the provision of non-aeronautical services, there may be a theoretical case to appropriate airport locational rents to push the price of aeronautical activities closer to marginal cost. Gains are possible only when the marginal cost of providing aeronautical services lies below their average cost and the airport operator cannot or does not offer inducements to marginal airport users.

However, in practice, it is highly unlikely that the single-till 'taxation' of airport locational rents will be non-distorting. The efficiency losses involved could be much larger than any efficiency gains from lower aeronautical prices (which will depend on the elasticity of demand for aeronautical services). This risk arises because of the incentives created for the airport not to earn locational rents (and therefore not to allocate airport land appropriately), to dissipate such rents in higher costs, or to encourage dissipation of rents by prospective tenants competing for them.

Issues with dual-till regulation

A dual till, which regulates only those aeronautical services in which an airport is most likely to have market power, is not without problems, particularly in its implementation. A dual till requires the regulatory basket to be clearly and comprehensively defined (see chapters 8 and 9 for a discussion of some issues arising from the definition of current price caps). Further, if prices under a price cap reflect airport costs, then any common costs must be allocated between regulated and unregulated activities. Under a dual till, an airport also has a strong incentive to

[10] This raises the question of whether it may be more appropriate for the Commonwealth Government to use airport lease sale proceeds to subsidise aeronautical activities, if such subsidisation were considered efficient. Indeed, it could be argued that the Government did this to some extent by selling core-regulated airports subject to five-year price caps that largely maintained single-till aeronautical prices.

restrict competition from off-airport providers (eg by restricting access to the airport or by extending the airport's boundaries by regulation).[11]

A dual till also has the potential to discourage investment in aeronautical services in favour of non-aeronautical services if allowable returns in the former are constrained relative to returns in the latter. At the same time, however, an airport operator may have an incentive to expand aeronautical capacity to increase passenger throughput and, consequently, rents from commercial activities. This may offset any tendency for under-investment in aeronautical facilities.

11 The airport also could buy up surrounding land, but presumably it would have to compete with other buyers and pay a competitive price.

D Characteristics of demand and competition at core-regulated airports

This appendix summarises the main demand and competition characteristics of the core-regulated airports. These are used in the analysis of the extent of market power held by particular airports in providing domestic passenger services (chapter 5).

In the tables that follow, the categories 'annual passenger movements' and 'proportion of passenger movements that is international' are for 2000-01 and are taken from the Department of Transport and Regional Services (unpublished data). The 'proportion of revenue that is non-aeronautical' is taken from ACCC (2001b, c, d, f, m), for 2000-01 for Sydney Airport and 1999-00 for all other airports. As noted in chapter 2, non-aeronautical revenue covers a range of services, not all of which are provided at all core-regulated airports (eg business parks). This may contribute to some of the variation in the proportion of non-aeronautical revenue across airports. 'Main market segments' generally refers to interstate overnight visitors to the city, region or State (not the airport) (where it refers to domestic — interstate and intrastate — visitors, this is stated). Unless otherwise stated, these data, as well as data on modal substitution possibilities, are from BTR (2000b) for 1999.

Table D.1 **Demand and competition characteristics of Adelaide Airport**

Annual passenger movements	:	4 464 998
Proportion of passenger movements that is international	:	6%
Proportion of revenue that is non-aeronautical	:	80%
Main market segments (percentage of interstate overnight visitors in 2000)	:	For South Australia as a whole, business (36%) and visiting friends and relatives (VFR — 25%) (SATC 2001).
Destination substitution possibilities	:	Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities (SATC 2001)	:	Low for business travellers. For VFR and holiday travellers, some modal substitutes appear viable, particularly for visitors from Victoria and parts of New South Wales (these States accounted for 75% of visitors to South Australia in 2000). More than half of all interstate overnight arrivals to South Australia arrived by private vehicle in 2000. Train services also are available.
Airport substitution possibilities	:	Low. There are no proximate regular public transport (RPT) airports.

Table D.2 Demand and competition characteristics of Alice Springs Airport

Annual passenger movements	: 717 722
Proportion of passenger movements that is international	: 0%
Proportion of revenue that is non-aeronautical	: 61%
Main market segments (percentage of interstate overnight visitors in 1999)	: Holiday/leisure (55% to the Northern Territory as a whole). Of all travellers (including interstate and international) to the 'Centre' region, 77% went for holiday/leisure purposes in 1999-00 (NTTC 2000).
Destination substitution possibilities	: High, because Alice Springs competes with other tourist destinations.
Modal substitution possibilities	: Moderate. More than half the interstate visitors to the Northern Territory arrive by air, but a significant proportion (over 40% in 1999-00 (NTTC 2000)) arrives by other modes.
Airport substitution possibilities	: High. Yulara (Ayers Rock) Airport provides a viable alternative to Alice Springs, especially for tourists who travel to destinations such as Uluru.

Table D.3 Demand and competition characteristics of Brisbane Airport

Annual passenger movements	: 12 467 537
Proportion of passenger movements that is international	: 20%
Proportion of revenue that is non-aeronautical	: 72%
Main market segments (percentage of domestic overnight visitors in 1999)	: Business (32%) and VFR (32%) (Tourism Queensland 2000a).
Destination substitution possibilities	: Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities	: Low for business traffic. However, for VFR and holiday travellers, modal substitutes — particularly private vehicle — may be viable (about 45% of interstate visitors to Queensland arrived by modes other than air in 1999).
Airport substitution possibilities	: Low. Although there are relatively proximate airports in Coolangatta and Maroochydore, they do not appear to provide significant competition due to the scale of Brisbane, the extent of its business traffic, and its much stronger ability to service international traffic.

Table D.4 **Demand and competition characteristics of Canberra Airport**

Annual passenger movements	: 2 107 219
Proportion of passenger movements that is international	: 0%
Proportion of revenue that is non-aeronautical	: 59%
Main market segments (percentage of interstate overnight visitors in 1999)	: Business (30%) and VFR (34%).
Destination substitution possibilities	: Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities	: High. Despite the high proportion of business and VFR visitors, a significant proportion of visitors (71% in 1999) arrives in Canberra by car. This may reflect the fact that total travel times by air and car are similar on the Sydney–Canberra route.
Airport substitution possibilities	: Low. There are no proximate RPT airports.

Table D.5 **Demand and competition characteristics of Coolangatta Airport**

Annual passenger movements	: 1 888 008
Proportion of passenger movements that is international	: 2%
Proportion of revenue that is non-aeronautical	: 45%
Main market segments (percentage of domestic overnight visitors in 1999)	: Holiday/leisure (62%) (Tourism Queensland 2000b).
Destination substitution possibilities	: High. The Gold Coast competes with other tourist destinations.
Modal substitution possibilities	: Moderate. Many domestic visitors to the Gold Coast arrive in private vehicles (69% in 1999 (Tourism Queensland 2000b) although this figure includes intrastate visitors so it would tend to overstate the proportion of interstate visitors that drives).
Airport substitution possibilities	: High. Brisbane Airport appears to be a viable alternative to Coolangatta for visitors to the Gold Coast.

Table D.6 **Demand and competition characteristics of Darwin Airport**

Annual passenger movements	: 1 078 481
Proportion of passenger movements that is international	: 16%
Proportion of revenue that is non-aeronautical	: 54%
Main market segments (percentage of interstate overnight visitors in 1999)	: Holiday/leisure (55% of interstate overnight visitors to the Northern Territory as a whole; and 55% of all visitors (including interstate and international) to the 'Top End' region of the Northern Territory in 1999-00 (NTTC 2000)).
Destination substitution possibilities	: High. Although the proportion of business travellers to the 'Top End' is higher than for the rest of the Territory, most travellers go for a holiday. Therefore, Darwin and surrounding areas compete with other tourist destinations, including other areas in the Territory.
Modal substitution possibilities	: Low for business travellers and other travellers visiting Darwin only, given the relative isolation of Darwin. For holiday travellers who visit several regions in the Territory, the potential for modal substitution appears to be more significant (over 40% of interstate visitors to the Territory arrived by modes other than air in 1999-00 (NTTC 2000)).
Airport substitution possibilities	: Vary by market segment. Low for those visiting only the 'Top End'. May be higher for those visiting several areas within the Territory, but still likely to be low overall.

Table D.7 **Demand and competition characteristics of Hobart Airport**

Annual passenger movements	: 973 922
Proportion of passenger movements that is international	: 0%
Proportion of revenue that is non-aeronautical	: 67%
Main market segments (percentage of interstate overnight visitors in 2000)	: Holiday/leisure (56% to Tasmania as a whole (Tourism Tasmania 2001)).
Destination substitution possibilities	: High. Hobart (and Tasmania generally) compete with other tourist destinations.
Modal substitution possibilities	: Moderate. Sea, used by 22% of arrivals to Tasmania in 2000 (Tourism Tasmania 2001), is a viable alternative for holiday (and VFR) visitors.
Airport substitution possibilities	: High. Launceston Airport in particular appears to provide (potential and actual) competition. The high proportion of tourists that visits more than one area in the State increases the potential competition between airports.

Table D.8 **Demand and competition characteristics of Launceston Airport**

Annual passenger movements	: 522 100
Proportion of passenger movements that is international	: 0%
Proportion of revenue that is non-aeronautical	: 66%
Main market segments (percentage of interstate overnight visitors in 2000)	: Holiday/leisure (56% to Tasmania as a whole (Tourism Tasmania 2001)).
Destination substitution possibilities	: High. Launceston (and Tasmania) compete with other tourist destinations.
Modal substitution possibilities	: Moderate. Sea (used by 22% of arrivals to Tasmania in 2000 (Tourism Tasmania 2001)), is a viable alternative for holiday (and VFR) visitors.
Airport substitution possibilities	: High. There are a number of airports in relatively close proximity to Launceston. Hobart Airport, in particular, appears to provide (potential and actual) competition. The high proportion of tourists that visits more than one area in the State increases the potential competition between airports.

Table D.9 **Demand and competition characteristics of Melbourne Airport**

Annual passenger movements	: 16 908 656
Proportion of passenger movements that is international	: 19%
Proportion of revenue that is non-aeronautical	: 67%
Main market segments (percentage of interstate overnight visitors in 1999)	: For Victoria as a whole, business (34%) and VFR (30%).
Destination substitution possibilities	: Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities	: Low for business traffic. However, for VFR and holiday travellers, modal substitutes — particularly private vehicle — appear to be particularly viable for visitors from some areas, including South Australia and New South Wales. About 49% of interstate overnight travellers arrived in Victoria by air in 1999.
Airport substitution possibilities	: Low. There are no proximate RPT airports. Although Essendon Airport, for example, is physically capable of handling B737 traffic, there are administrative problems in doing so.

Table D.10 **Demand and competition characteristics of Perth Airport**

Annual passenger movements	: 5 162 980
Proportion of passenger movements that is international	: 31%
Proportion of revenue that is non-aeronautical	: 71%
Main market segments (percentage of interstate overnight visitors in 1999)	: For Western Australia as a whole, business (40%) and VFR (26%).
Destination substitution possibilities	: Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities	: Low, given the isolation of Perth. Of interstate overnight arrivals to Western Australia in 1999, 82% arrived by plane.
Airport substitution possibilities	: Low. There are no proximate RPT airports.

Table D.11 **Demand and competition characteristics of Sydney Airport**

Annual passenger movements	: 25 779 242
Proportion of passenger movements that is international	: 33%
Proportion of revenue that is non-aeronautical	: 60%
Main market segments (percentage of domestic overnight visitors in 1999-00)	: Business (33%) and VFR (34%) (Tourism New South Wales 2001).
Destination substitution possibilities	: Relatively low, given the dominance of business and VFR travellers.
Modal substitution possibilities	: Relatively low for business traffic (except for the Sydney–Canberra route). However, for VFR and holiday travellers, modal substitutes — particularly private vehicle — appear to be particularly viable for visitors from some areas, including the ACT, Queensland and Victoria.
Airport substitution possibilities	: Low. There are no proximate RPT airports.

Table D.12 **Demand and competition characteristics of Townsville Airport**

Annual passenger movements	: 731 960
Proportion of passenger movements that is international	: 0%
Proportion of revenue that is non-aeronautical	: 62%
Main market segments (percentage of domestic overnight visitors in 1999)	: Holiday/leisure (53% of visitors to Tropical North Queensland (Tourism Queensland 2000d)).
Destination substitution possibilities	: High. Townsville competes with other tourist destinations, both in Tropical North Queensland and elsewhere.
Modal substitution possibilities	: Relatively low for business traffic. For VFR and holiday travellers, the potential to use other modes exists. However, this option does not appear to be as attractive as for other areas in Queensland (43% of domestic visitors to Tropical North Queensland arrived by air in 1999 (Tourism Queensland 2000d)).
Airport substitution possibilities	: Low. There are no proximate RPT airports.

E Fuel throughput levies and taxi charges

The introduction of fuel throughput levies and taxi charges by some airport operators has generated considerable debate. This appendix describes the background to these charges, discusses their treatment under price regulation following the sale of leases, and highlights issues for future regulation.

E.1 Fuel throughput levy

Aircraft refuelling services provided by airport operators at core-regulated airports were subject to price monitoring by the ACCC under the *Prices Surveillance Act 1983* (PS Act) following the sale of leases (chapter 3). In October 2001, changes to prices-oversight arrangements at core-regulated airports included the removal of all price regulation at Coolangatta, Alice Springs, Hobart, Launceston and Townsville airports. This meant that refuelling services at these airports were no longer subject to price monitoring. However, monitoring of refuelling services continues to apply at other core-regulated airports.

At no time have aircraft refuelling services been subject to price-cap arrangements, and neither were they subject to prices surveillance (notification) prior to the sale of leases.

Under price monitoring arrangements implemented following the sale of leases, Brisbane Airport Corporation (BAC) and Westralia Airports Corporation (WAC) introduced a new charge on oil companies for aircraft refuelling services — a fuel throughput levy. Objections to the imposition of this levy from oil companies and airlines led to a review by the ACCC, but a decision on the issue has yet to be announced by the Commonwealth Government.

Background

Refuelling facilities at Brisbane and Perth (international) airports are known as joint user hydrant installations (JUHIs). They consist of a fuel storage facility, a hydrant

refuelling site and connecting pipelines. These were established, and are owned, by joint ventures comprising several oil companies.

Airport operators charge the oil companies for use of the land by way of licence fees and rents payable pursuant to the leases under which the oil companies occupy the refuelling sites. This charge for aircraft refuelling services, when imposed by the Federal Airports Corporation (FAC), was not subject to prices surveillance. Since the sale of leases for Phase 1 and 2 airports, and the lease of Sydney Airport to Sydney Airports Corporation Limited, this charge has been subject to price monitoring by the ACCC.

According to BP (sub. to ACCC 1998b), in 1995 the FAC mooted the concept of a fuel throughput levy during negotiations with the oil companies to establish a standard licence for JUHIs. The oil companies strongly resisted the inclusion of a fuel throughput levy in a standard licence. Negotiations stalled until 1997 when the oil companies signed the licences (to continue for 15 years), with the inclusion of a provision for a fuel throughput levy. The FAC, however, did not activate the provision, although it had the power to do so. Oil companies continued to pay, on a dollar per square metre basis, for lease of the land.

On privatisation, airport operators succeeded to the FAC's rights and obligations under the licence (*Airports (Transitional) Act 1996*), acquiring the right to impose the fuel throughput levy.

In 1997, BAC informed Shell of its intention to impose a new charge for aircraft refuelling services — a fuel throughput levy of 0.4 cents per litre on all fuels supplied, distributed or transferred through the combined main/short pipeline at Brisbane Airport. Shell objected and the dispute was referred to an 'independent expert', in accordance with licence provisions, who subsequently confirmed that 'BAC had a legal right to charge the levy and the level of 0.4 cents per litre was reasonable in terms of BAC's contractual rights' (ACCC 1998b, pp. 16–17). In July 1998, BAC introduced the levy.

WAC introduced a fuel throughput levy of 0.5 cents per litre on refuelling operations at the Perth Airport international terminal from June 1999.

The revenue raised by the BAC and WAC fuel throughput levies, in 1999-00, was $2.5 million and $727 000 respectively (ACCC 2001b, d). The revenue is in addition to revenue obtained from the existing lease charges.

Many airports in other countries charge for refuelling services on a volume of fuel throughput basis, including Amsterdam, Kuala Lumpur, Los Angeles, Manchester and Aberdeen, and Auckland and Wellington airports in New Zealand. Wellington

Airport moved in a different direction from BAC and WAC, re-negotiating with oil companies to introduce a fixed rent charge and to reduce the existing fuel throughput charge. In Australia, since the late 1980s, Cairns Airport (not subject to price regulation), has charged for refuelling services in two parts: a lease charge, and a licence agreement based on a sliding scale volume of fuel uplifted.

The ACCC review

In undertaking its monitoring role, and in response to concerns by oil companies and airlines, the ACCC (1998b) undertook a public review of fuel throughput levies. In undertaking its review, the ACCC paid particular regard to s. 17(3)(b) of the PS Act:

> the need to discourage a person who is in a position substantially to influence a market for goods or services from taking advantage of that power in setting prices.

The ACCC also took account of the Treasurer's media release on price monitoring, which stated:

> Price monitoring will allow the ACCC to collect data where the airport operator may have scope to exercise market power but where coverage of the services under the more formal price cap arrangements is not considered warranted. Any abuses of market power detected through the prices monitoring arrangements will be the trigger for consideration of stricter forms of prices oversight. (Costello 1998)

The ACCC summarised its approach as follows:

> For the purposes of this report 'market power' refers to circumstances in which a person is in a position to substantially influence a market for goods and services. An 'abuse of market power' occurs where the person takes advantage of that power in setting prices. (ACCC 1998b, p. 14)

Based on this approach, the ACCC (1998b) addressed four issues:

- the extent of increases in the price of refuelling services and airport profits as a result of increases in refuelling charges;
- whether fuel throughput levies could be justified through increases in costs and/or offsetting reductions in other charges;
- whether the fuel throughput levy is an abuse of market power; and
- whether the fuel throughput levy should trigger a stricter form of prices oversight, and the form that should take.

On consideration of information provided by BAC and WAC, and submissions from interested parties, the ACCC formulated its conclusions and recommended that refuelling services, and therefore both lease payments and fuel throughput

levies, be included under the price-cap arrangements (box E.1). This means that if revenue were to be pressing up against the CPI-X limit, revenue from aircraft refuelling would need to be balanced by reductions in other revenue.

Box E.1 **ACCC report on fuel throughput levies**

The ACCC (1998b) report on the introduction of fuel throughput levies by Brisbane Airport Corporation (BAC) and Westralia Airports Corporation (WAC) concluded and recommended the following:

> Introduction of fuel throughput levies will significantly increase the price of refuelling services at airports where they are introduced. (p. 5)
>
> The validity of the contractual arrangements is separate from the issue of the relationship of fuel throughput levies to costs or reductions in charges elsewhere, and as such is not directly relevant to the Commission's monitoring role … (p. 30)
>
> The introduction of a fuel throughput levy at Brisbane and Perth airports is likely to result in some or all of that levy being passed on to the airlines refuelling at those ports. (p. 5)
>
> A logical outcome … is higher charges to passengers on at least some airline services to that destination. (p. 25)
>
> … the fuel throughput levies introduced by BAC and proposed by WAC are not justified in terms of increases in costs or through offsetting reductions in other charges. (p. 6)
>
> There is a strong case that large airports have market power in the market for refuelling services. (p. 7)
>
> There is a strong case that by introducing fuel throughput levies airport operators have taken advantage of market power that they have in the provision of aircraft refuelling services. (p. 7)
>
> The Commission recommends that stricter forms of prices oversight should be considered in relation to aircraft refuelling services. (p. 8)
>
> The Commission recommends that refuelling services are included within a CPI-X price cap. (p. 11)

Source: ACCC (1998b).

The ACCC reported to the Treasurer and publicly released its report in December 1998. It reconfirmed its approach this year, suggesting that refuelling services be subject to a price cap (sub. 36). Moreover, in its draft decision on aeronautical pricing at Sydney Airport, the ACCC (2001h) decided that 'above-normal' returns from aeronautical-related services, such as fuel throughput levies and car parking, should be taken into account in pricing aeronautical services. Specifically, these returns were to be subtracted from aeronautical revenue to generate a total allowable revenue from aeronautical services for the airport (ACCC 2001h). Following a Direction (No. 22) in April 2001 from the Minister for Financial Services and Regulation, the ACCC (2001i) moved away from this position in the final decision.

To date, the Commonwealth Government has not announced a decision on this issue. Both BAC and WAC continue to impose a fuel throughput levy, which remains outside the price cap.

Divergent views

Submissions to the ACCC and, more recently, to this inquiry, have highlighted the contentious nature of the fuel throughput levy. Airport operators contended, in essence, that they should be allowed to introduce a fuel throughput levy, and that it should not be included under price-cap arrangements.

On the other hand, oil companies (including Shell, sub. DR63) argued that the fuel throughput levy should not have been introduced by BAC and WAC, that its imposition represents an abuse of market power and cannot be justified, and therefore that the levy should be subject to stricter prices oversight. The airlines and the International Air Transport Association (sub. DR56) in general supported this view.

Airport investors (Motor Trades Association of Australia Superannuation Fund, Hastings Funds Management, Australian Council for Infrastructure Development; subs 22, 19, 28) did not make submissions to the ACCC review of fuel throughput levies. However, they expressed their disagreement with the ACCC's conclusions and recommendations to this inquiry.

E.2 Taxi charges

Price-cap arrangements apply to the provision of aeronautical services, being limited to aircraft movement facilities and activities, and passenger processing facilities and activities. The latter includes 'landside roads, landside lighting and covered walkways' (chapter 3).

Several airport operators have introduced airport vehicle access charges for taxis. In 1998, BAC introduced a fee for taxis of $1 per passenger pick-up at Brisbane Airport. WAC also introduced a fee for taxis in 1998 — $1 per pick-up at Perth Airport (unbooked) and $2 per pick-up (booked). The following year Capital Airport Group introduced a taxi charge of $2 at Canberra Airport.[1] Taxi charges were recently introduced at Melbourne Airport — a 66 cent charge per taxi for

1 Northern Territory Airports introduced taxi charges at Darwin and Alice Springs airports in 1998, but removed them the following year.

passenger pick-up (passengers are charged $1, 66 cents of which is revenue to the airport operator, and 34 cents is a handling commission to the taxi).[2]

The introduction of these charges has been particularly contentious. The airport operators argued that taxi charges did not relate to the use of 'landside roads' and were not within the definition of 'aeronautical services', and therefore that revenue derived from taxi charges had not (and should not be) included within the price cap. Hastings Funds Management (part-owner of several airports) noted:

> We have consistently maintained that charges for ground transport are in fact not charges to access the land-side roads (as would be the case, for example if a toll was placed on the road), but a concession fee for the right to conduct business by taxi and bus operators. (sub. 19, p. 14)

The ACCC, on the other hand, considered that revenue derived from taxi charges was covered under the definition of 'aeronautical services' (being included in 'landside roads') and therefore was included in the price cap (ACCC 1999e, f; 2000d). The ACCC treated these as 'new' charges under Direction No. 20, pursuant to the PS Act, which stated that 'charges on new or varied services are to be factored into the price-cap arrangements if the services are declared services'.

The ACCC therefore requested that BAC, WAC and Capital Airport Group formally 'notify' the ACCC of their proposals to introduce a taxi charge, which they did, albeit on a 'without prejudice' basis. This inclusion has contributed to BAC and WAC not complying with the price cap; revenue has been 'over-recovered' and will have to be passed back to users within a specified time period.

Canberra Airport instigated an action in the Federal Court against the ACCC in an attempt to have the ACCC's decision on taxi charges overturned. In March 2001, the Federal Court ruled, in a 'line-ball' decision, in favour of the ACCC — finding that the charge was within the price cap because it related to the use of landside roads. The Court stated:

> … it is submitted for the applicant [Canberra Airport] that, on the facts, the area in question is properly described as a car park or marshalling yard and is simply not an access way for through traffic.
>
> The primary submission on behalf of the respondent [ACCC], in summary, is that the area is physically an extension of the main road …
>
> The issue is finely balanced, with each argument capable of acceptance. My mind has fluctuated as to the correct result. In the end I am persuaded that the area is best seen as part of the overall road system of the Airport in a way which, for example, car parks are not. (Federal Court of Australia 2001a, paras 21–3)

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2 A $2 per vehicle pre-booked taxi fee applies to passengers departing in a taxi from the Premium Parking area.

The Full Federal Court has since dismissed an appeal by Canberra Airport, concluding that:

> In our view, the area is, in its physical aspect, sufficiently connected to the main thoroughfare, and, in its functional aspect, properly seen as incidental to the purpose served by that thoroughfare, to warrant itself the description of 'road'. (Federal Court of Australia 2001b, para. 16)

Since then, the changes to price regulation in October 2001 (chapter 3) removed aeronautical services at Canberra Airport from the price cap. Both aeronautical and aeronautical-related services are now subject to the same price-monitoring arrangements. Thus, for the time being, this taxi charge issue is not relevant to Canberra Airport in the context of price regulation.

Melbourne Airport is the only airport operator to seek ACCC consideration of the taxi charge under necessary new investment (NNI) provisions of the price-cap arrangements (chapters 3 and 8). However, in so doing, Melbourne Airport (2001) noted that it considered that the charge should be subject to price monitoring, not declaration under the price cap, and that because of different circumstances, the Federal Court decision regarding Canberra Airport would shed little light on the Melbourne Airport situation.

Melbourne Airport sought approval under NNI provisions to introduce a $1.40 taxi charge to recover costs associated with development of a taxi facility, including unrecovered road costs, taxi car-parking development costs and taxi rank labour costs. The Victorian Taxi Association, representing the taxi industry, disagreed with the imposition of the charge, commenting that taxi passengers would not receive any service improvement, that the charge was an unfair tax, and that the timing of its introduction was poor. The Association also noted that it was concerned about the imposition of taxi charges in principle — that taxi operators may not be allowed to pass on charges to passengers without delay, and that charges may affect the demand for taxi services (sub. to ACCC 2001a). The Transport Workers Union, representing a smaller but increasing number of taxi drivers, noted that taxi drivers (content with existing facilities) saw no need to introduce new taxi facilities and therefore objected to the charge (sub. to ACCC 2001a).

The ACCC considered the proposed taxi charge according to criteria for NNI set out in the Department of Transport and Regional Development Pricing Policy Paper (DoTRD 1996) and replicated in Direction No. 20 pursuant to the PS Act (chapter 3). It found that some of the costs met the criteria and therefore could be 'passed through' the price cap — specifically, that 66 cents (GST inclusive) of the proposed $1.40 charge would not be subject to the price cap (ACCC 2001a). Following this decision, Melbourne Airport introduced a 66 cent taxi charge, as noted above.

E.3 Issues arising from price regulation

The debates regarding fuel throughput levies and taxi charges highlight a problem intrinsic to a dual-till system — that given there must be two baskets of services (those subject to a price cap, and those not subject) there is likely to be contention, at least for some services, regarding:

- which services *are* within the price cap and which are not (illustrated by the taxi charges debate); and
- which services *should be* within the price cap and which should not (illustrated by the fuel throughput levy and taxi charges debates). The fuel throughput levy debate highlights, at least for some airport operators and some services, that whether the potential for abuse of market power exists (and is abused) can be a contentious issue.

Similarly, there may be disagreement regarding whether services not within the price cap are, or should be, subject to price monitoring or to no price regulation.

The taxi charges debate highlights the importance of clarity and precision in legislation defining the basket of services to be subject to the price cap. The scope for different interpretations of particular legislative clauses cannot be eliminated, but it can be minimised in the drafting process. Moreover, shortcomings in the legislation can be addressed by appropriate amendment as they arise.

The lack of clarity about what services relate to 'landside roads' has created uncertainty among airport operators and users. As with fuel throughput levies, the uncertainty has been exacerbated by the length of time that these issues remain unresolved and the apparent difference between the ACCC interpretation and the Commonwealth Government's intent on these issues.

In relation to fuel throughput levies, airport operators claim to have assessed the risks and made commercial decisions (bidding for airport leases) based, in part, on their perception of Commonwealth Government policy at the time of sale of leases — that refuelling services were outside the price cap.

Several airport operators commented on what they perceived to be Commonwealth Government policy prior to, and after the sale of leases. Melbourne Airport, BAC, WAC and Australian Airports (Townsville) put the view that they had a contractual right to impose a fuel throughput levy because of a pre-existing FAC (a Commonwealth Government agency) contract with the oil companies (subs 7, 8, 21; trans., p. 16).

BAC noted other Commonwealth Government representations:

> … the Commonwealth Government's Office of Asset Sales confirmed to airport bidders during the privatisation process they would be contractually entitled to introduce a fuel throughput fee … (sub. 8, p. 38)

Airport operators were of the view that when they exercised this contractual right, charges (including fuel throughput levies) for aircraft refuelling services would not be subject to a price cap. As noted above, when the FAC operated airports, charges for the provision of refuelling services were not subject to price regulation. Moreover, airport operators (Melbourne Airport, BAC, WAC; subs 7, 8, 21) added that representations by the Commonwealth Government to prospective bidders for the leases of Phase 1 and 2 airports did nothing to dispel their view that fuel throughput levies could be implemented outside the price cap. Melbourne Airport commented:

> In relation to fuel throughput levies, it is our view that in the information memorandum to bidders the Commonwealth did represent that that was a source of revenues available to them that would not be within the cap. (trans., p. 169)

As a consequence, bidders factored projected revenue from fuel throughput levies into their bid prices for the leases. WAC noted:

> The bidders for PIA [Perth International Airport] factored new revenue from the fuel levy into their bid, on the basis that pre-existing contracts allowing for the fuel levy had been entered into by the FAC and agreed with fuel companies prior to the airport sale. Moreover, the opportunity to implement the fuel levy was specifically referenced by the Commonwealth Government in the Information Memorandum.
>
> Accordingly, airports which acquired the benefits of these contracts, have merely exercised their rights to charge the fee. (sub. 21, p. 21)

In its submission to the ACCC review of fuel throughput levies, WAC commented:

> If the Government did not want WAC, or other bidding groups, to impose such a fee, it should have made [it] perfectly clear prior to January 1997 … (sub. to ACCC 1998b, p. 3)

The Productivity Commission is not aware of any public statements by the Commonwealth Government (information memoranda to bidders were confidential) specifically identifying services to be included or excluded from the price cap prior to successful bidders for Phase 1 airports being announced in May 1997. In June of that year, the Commonwealth Government publicly made its intentions clear regarding refuelling services — that they would not be subject to the price cap. The Treasurer stated that refuelling services would be subject to price monitoring (Costello 1997). This public information was therefore available to bidders for Phase 2 airports, although the policy was not formalised until May 1998 by

Declarations (Nos 83 and 84) pursuant to the PS Act — after the successful Phase 2 airport bidders had been announced.

Phase 1 airport bidders may not have been clear about the implications of the formal monitoring process. Although the Department of Transport and Regional Development Pricing Policy Paper (DoTRD 1996), distributed to prospective bidders for Phase 1 airports, noted that there would be monitoring of selected aeronautical-related services, it did not specify the services and did not make mention of the power of the ACCC to recommend that particular aeronautical-related services be transferred to within the price cap. It was not until June 1997, after finalisation of the bids, that the Treasurer publicly announced that there was the potential for stricter prices oversight (Costello 1997).

In relation to taxi charges, airport operators (eg Australian Airports (Townsville), Melbourne Airport, BAC, and WAC: trans., p. 17; subs 7, 8, 21) and Hastings Funds Management (sub. 19) stated that Commonwealth Government advice during the bidding stage for airports, and since (eg information memoranda), was that revenue from vehicle access charges was to be collected outside the price cap.

In summary, with respect to these two charges, considerable uncertainty has ensued. This seems to stem from differences in interpretation, a lack of clarity, precision and transparency regarding the policies at, and since, the sale of leases, and time delays in formal Commonwealth Government statements. Moreover, changes in Government policy that may conflict with Government commitments at the time of sale could raise issues of sovereign risk for parties that perceive themselves as adversely affected.

F Valuation of aeronautical land and efficient land use

This appendix considers some issues that arise in the valuation of airport land for the purposes of regulation of aeronautical prices. It begins with an in-principle discussion of land valuation and the importance of the concept of opportunity cost. Some practical issues associated with land valuation are then considered, drawing on the issues raised in the recent ACCC (2001i) review of aeronautical prices at Sydney Airport. The intention is not to recommend or suggest a detailed valuation methodology, which would be beyond the scope of this inquiry, but rather to explore the broad principles that can guide the valuation of aeronautical land.

Aeronautical services, particularly for large aircraft in large cities, are land intensive. Runways need to be several kilometres in length and substantial buffer zones between the airport and surrounding activities (particularly residential areas) are desirable. In addition, most airline passengers value proximity to city centres, and airports often are situated on land that would be valued highly for other uses. At June 1997, the Federal Airports Corporation (FAC 1997) valued total land in its airport network at around 30 per cent of its total (including non-aeronautical) fixed assets.[1]

Because of its significance in the aeronautical asset base, the valuation of land can have a major effect on the aeronautical prices that a regulator may consider justified on the basis of recovering airport costs. In general, this has not been an issue to date for the privatised core-regulated airports because their (average) aeronautical charges have been determined by adjustments to FAC starting prices under price caps, including related new investment cost pass-throughs.[2] However, Sydney Airport is not subject to a price cap; and the ACCC examined Sydney Airports

1 This was the last year in which the FAC operated all of the capital city airports. The FAC valued land on the basis of market value for alternative use (capped at light industrial) at 30 June 1996. Other fixed assets were valued at written-down replacement cost at 30 June 1996 plus asset additions and less asset sales and depreciation during 1996-97.

2 Where new aeronautical investment has involved use of land previously used for non-aeronautical purposes, regulatory assessment of the allowable price increase has included a return on that land.

Corporation Limited's (SACL) September 2000 proposal for aeronautical price increases using a cost building block approach.

Although Sydney Airport is smaller in land area than most other major Australian airports, it is situated close to the Sydney CBD and hence the market value of its land is very high. SACL's (2000) valuation of aeronautical land averaged $115 per square metre and represents nearly 42 per cent of the aeronautical asset base.[3] Participants in the ACCC's examination of SACL's price increase proposal presented a variety of options for valuing land for the purpose of price regulation. These provided a very wide range of land values and, by implication, significant variations in cost-based aeronautical prices.

In considering Sydney Airport land values, the ACCC (2001i) drew attention to its earlier views (ACCC 1999c) on asset valuation in general:

> In determining an appropriate asset valuation methodology economic principles and analysis do not provide an unambiguous decision rule for the valuation of sunk assets. Rather economic principles provide lower and upper bounds — scrap value and replacement cost. Within these bounds there is opportunity for regulatory judgement. (ACCC 2001i, p. 132)

The scope for such 'regulatory judgement' appears particularly pronounced with regard to Sydney Airport land. The ACCC reduced SACL's proposed value for aeronautical land of $705 million by over one-third to $452 million. In itself, this lower land value leads to average aeronautical prices being about 8 per cent lower than otherwise.[4] Using the zero land value (for existing land) suggested by the Board of Airline Representatives of Australia (BARA 2000), and applying the ACCC's assessment of SACL's cost of capital, would have led to prices about 20 per cent lower than SACL's request.

This wide variation in the valuation of land contrasts with other important elements of Sydney Airport's cost structure about which there was more agreement and in which the ACCC, in reaching its pricing decision, varied much less from SACL's proposal. The ACCC accepted, for example, SACL's valuations of other assets

3 SACL estimated the opportunity cost of land by considering the price that a developer would pay for a similar land parcel in a similar location (after allowing for development and holding costs). It then added the land-related costs (for example, holding costs) of developing the site into an airport over five years. This is a 'new entry cost' concept for valuing land.

4 In conjunction with its proposal to include land at market values, SACL also included a deduction of $14.7 million from allowable aeronautical revenue to allow for the forecast annual real capital gain on land. However, because the ACCC preferred to use indexed historical cost land values it did not take account of SACL's proposed deduction when determining allowable prices.

(although it reduced allowable depreciation by nearly 25 per cent) and it reduced allowable operating and maintenance expenditure by 10 per cent.

The opportunity cost concept is the appropriate approach to land valuation from an economic efficiency perspective. It assists the government (and private investors in airports) in making decisions on the efficient location of the airport by signalling to users the land use costs of their air travel decisions — their willingness to pay indicating that they value the current airport site more than its next best use. Any move away from opportunity cost pricing will obscure these signals. Opportunity cost also provides the correct incentives to the airport operator regarding use of airport land.

The New Zealand Commerce Commission (CC), in its draft report on price control for major NZ airports, argued in favour of opportunity cost as the appropriate value of land for price regulation purposes, although it excluded land held for future airport development:

> Valuing airfield land at opportunity cost provides appropriate signals to either continue operating the land in its existing use (as an airfield) or to put the land to alternative use and relocate the airport. It also provides the appropriate incentives for new investment.
>
> Opportunity cost should be determined based on the highest alternative use value of airfield land. (CC 2001b, p. xxvi)

The ACCC, in its response to the Productivity Commission's draft report, noted that the Productivity Commission:

> … argues that land at Sydney Airport should be valued at opportunity cost. The Commission [ACCC] agrees with this principle. (sub. DR55, p. 18)

In a consultancy report for the ACCC, Dr Gannon argued that:

> The opportunity cost principle for land valuation is widely accepted, for example, by the ACCC, the NZCC, SACL, and BARA, although views differ substantially on its interpretation.
>
> But, there are also formidable methodological difficulties in *practical empirical application* of the principle to estimation of the value of the total land at a major capital city airport site. (sub. DR55, attachment B, p. 1)

The important questions are: what is the appropriate concept of opportunity cost? And how can it be estimated in practice? Section F.1 provides an in-principle discussion of aeronautical land valuation issues, focusing on the importance of land valuation for:

- determining the appropriate location for an airport; and
- deciding how to use land within the airport precinct.

Section F.2 then considers the third role of land valuation — the setting of regulated prices. This issue is explored by drawing on the recent ACCC decision in relation to Sydney Airport.

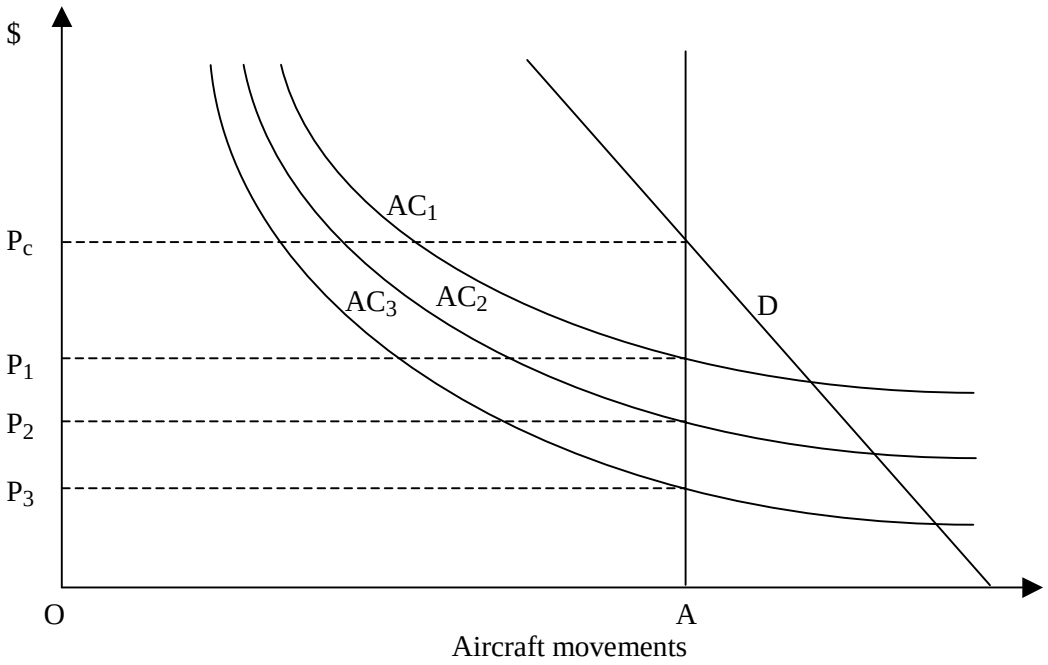
F.1 Efficient land use

Two aspects of the appropriate valuation of airport land are considered. One is the valuation of the site that could enter into calculations of whether an airport should be left where it is or moved to a new site. The other is the valuation that would guide efficient use of the existing site.

Valuation of existing airport land

Figure F.1 presents a very simplified picture of the demand for airport services and the costs of providing them. For simplicity all airport services are bundled together (including leases for retailing and so on) and the supply and demand for the package is related to aircraft movements. Demand is aggregated so there are no differences in demand at different times of day or year.

Figure F.1 **Market for airport services: different valuations of airport land**



The average cost curves (AC_1, AC_2 and AC_3) are drawn for different valuations of land. For AC_1, it is assumed that the average costs incorporate the highest

opportunity cost of the land, which could be redeveloping the land for residential purposes. Using existing values of neighbouring land (depressed by airport noise) gives average costs of AC_2.[5] Using BARA's proposed opportunity cost of airport land of zero could give AC_3.

Assume that price is regulated on a cost 'building-block' approach — that is, by adding up the production costs of the airport together with an assumed value of the land. In the absence of a capacity constraint, the price would be determined by the intersection of the AC_1 and the D curves.

Now assume that use of the airport is constrained to OA by regulation. (Assume also that capacity cannot be increased by buying more land and that the airport charges a single price and has to cover its costs.) The highest level that prices can reach under the building-block approach is P_1. However, the efficient price of airport services is P_c, at which price, demand is constrained to the available supply and those who value the service at P_c or more will purchase the services. If the airport were to be sold as an airport, then the revenue would be the capitalised value of $OA.OP_c$ less running costs. (The valuation of consumers of the airport would be larger than this, being the area under the demand curve up to the quantity OA. This is the amount of revenue that a perfectly discriminating monopolist would be able to raise from consumers of the services.)

The difference between P_c and P_1, P_2, and P_3 respectively, multiplied by the quantity OA, shows the 'economic rent' that could accrue to someone other than the airport if prices were constrained to P_1, P_2 or P_3 (some of the rent may be dissipated by queuing). It is only the price P_c that shows the value of the airport to the operator or potential purchaser, in its present site; it is this value that provides an appropriate signal as to whether to sell and move elsewhere, and to a government in evaluating the effects of regulation.[6]

If a building-block approach to price regulation is taken, AC_1 provides a better guide than AC_2 or AC_3, and also imposes a smaller burden on the non-price rationing of the demand to the constrained supply: excess demand is smaller with

5 The position of the average cost curves is for illustrative purposes. For example, it is also possible that AC_2 may be higher than AC_1 if proximity to the airport increases the value of neighbouring land relative to its value in an alternative use.

6 It should be noted that environmental considerations are not taken into account here — they are a necessary factor to be addressed in making any decision regarding moving etc in practice.

price P_1 than P_2 or P_3. Also, the rents accruing to those other than the airport operator (or government) are smaller with P_1 than P_2 or P_3.[7]

The analysis is made a little more complicated if the airport were capacity constrained only at certain times of the day. A more detailed discussion of capacity-constrained pricing issues is contained in appendix H.

Efficient use of airport land

Now consider the appropriate land valuations to guide the use of the fixed amount of airport land by the airport operator. Initially, the assumption is made that land (at the margin) can be allocated between different uses. Allowed pricing freedom, the operator would allocate land among various activities so they yielded the same (marginal) return on each. This would be equal to the price P_c if the output is constrained.[8] For those services that could be provided on or off the airport, only those that yield a benefit of P_c or more would be supplied on the airport. If the price is constrained below P_c then the operator would no longer have to be so selective in choosing what was located on-site. As noted earlier, constraining prices to below P_c may mean that some users who value airport services below P_c may obtain the services while those who value them higher than P_c may be excluded. So it may be that some services that are valued (at the margin) below P_c are provided on-site, instead of those that are valued at P_c or more. This potentially inefficient use of the airport site would be aggravated the lower is the regulated price.

If the regulated price were to be such that a single till 'taxed' away from the operator all profits from some airport activities to reduce the price of others, the operator would have no incentive to allocate airport land efficiently and would have an incentive to move off-site all activities on which a higher return was possible. (If the constrained return were below P_2, then there would be an incentive to sell some airport land if that were possible.)

If a dual till were to be applied, regulating prices on some activities but not others, then an efficient allocation of land between the two types of activity could be obtained only if the costs allowed in determining the regulated prices incorporated the full opportunity cost of the land. That opportunity cost would be the return available on land from producing unregulated services.

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7 Note that this is not implying that land values should be inflated or manipulated in order to achieve prices sufficient to ration demand to the constrained supply. Land should be valued at its opportunity cost and this value used for regulatory purposes.

8 Assume that the constraint is due to the availability of land at the airport.

Now assume that there are constraints on allocating land at the margin between uses. In particular, assume that there are two types of land — airside and landside — and that the constraint on aircraft movements means there is no point in moving landside land into airside use. (It is also assumed that there is no incentive to convert airside land into landside land.) The relevant opportunity cost of land for landside activities as a whole would be the actual cost of land off the airport site. If the services provided on landside land are free to locate either within the airport boundary or outside, then over time the price of landside land within the airport and surrounding land would be expected to converge. In the long run, the value of surrounding land would therefore indicate the lower bound on the valuation of landside land within the airport.

However, if there were locational advantages from being on the airport site (or on parts of it) then the locational rent should be added to the off-site value in considering the relevant opportunity cost for allocating any particular land between alternative on-site uses.

F.2 Sydney Airport and the ACCC decision

While there was wide support for valuing aeronautical land at its opportunity cost, participants who commented on the Sydney pricing proposal raised a number of issues relating to the empirical measurement of opportunity cost.

Issues relating to the valuation of land at Sydney Airport

A key issue was whether Sydney Airport would continue to operate as an airport and the impact of this on the opportunity cost of land. The Government has announced that it considers that Sydney Airport will be able to handle Sydney's air traffic growth until 2010, with a review of Sydney's airport needs to be conducted in 2005 (Anderson 2000). Even when a second airport is built, it is likely that Kingsford Smith will be retained because of its locational advantage.

BARA (2000) argued, in view of this, that the appropriate opportunity cost valuation of Sydney Airport land is zero because there were no other uses to which it would be put. BARA considered that any purchases of new land should be valued at its purchase price to provide appropriate incentives for SACL in making marginal additions to land. Network Economics Consulting Group (NECG 2000b), in a report to the ACCC, also contended that if there is no likelihood of Sydney Airport being closed then there is no opportunity cost associated with SACL land.

Pitchford (2000) argued that if the use of the current site as an airport is considered mandated by the Government, then the land's sale value is not relevant for assessing required regulatory return. He considered that for existing land, a (non-zero) value derived from users' valuations of airport services is appropriate.

It should be recognised that while such regulatory considerations may limit the airport owner's options in relation to sale of the land, they do not alter the opportunity cost *to the economy* of the land itself. The opportunity cost remains the value of the land to society in its next best available use (adjusted for any costs needed to prepare it for that use, such as the cost of demolition of existing facilities).

Another issue that has been raised relates to the costs and benefits of moving Sydney Airport and how these affect the valuation of land for regulatory purposes. The ACCC (2001i; sub. DR55) argued that, in deciding to move Sydney Airport, the Commonwealth Government would need to take into account:

> … a wide range of issues. These could include the costs of relocating the airport, the costs of providing infrastructure to service the new airport as well as less tangible considerations such as the costs and benefits of relocation on airport noise and travel times. Since a complete assessment of such matters is complex, and the magnitude of the components of the calculation is likely to change over time, the merits of using a full opportunity cost valuation should be weighed carefully against alternative approaches and is considered beyond the scope of this decision. (ACCC 2001i, p. 138)

However, in estimating the opportunity cost of land at Sydney Airport it is important to separate the narrower question of land value for regulatory purposes from the broader question of factors that will influence a decision to relocate the airport. The two are not synonymous and should not be confused.

The Civil Aviation Authority (CAA) considered a similar issue in its review of price caps at major UK airports. It concluded that:

> A full analysis of the demand and costs of airports would need to take into account the wider externalities created by airport activities. The most direct of these are environmental externalities, particularly noise, road congestion and emissions … The CAA believes that it is important that these costs and benefits be properly taken into account in decisions to expand capacity. However, taking direct account of these externalities is not one of the CAA's statutory objectives as an economic regulator of airports. This is the role of the planning system. (CAA 2001c, p. xiii)

It would be appropriate that the Government take account of all costs and benefits (both private and social) if it were considering relocating Sydney Airport. However, the opportunity cost of land at Sydney Airport remains its value in its next best use. The opportunity cost valuation should be used in regulatory pricing decisions because prices based on any another valuation will mean that signals regarding

consumers' willingness to cover the efficient cost of using the airport will be distorted.

The ACCC decision

The ACCC (2001i) considered that because the Mascot site was likely to continue as an airport or would need to be replaced by another airport, it was not appropriate to adopt SACL's proposal to use an estimate of its market value as an opportunity cost measure of aeronautical land value in developing cost-based prices. It also argued that prices based on market value of the whole aeronautical section of the site were not necessary to ensure efficient use of airport land by SACL. Instead, the ACCC valued aeronautical land by indexing the original cost of each of the land purchases that had gone into making up the current aeronautical land by CPI increases since their purchase. Hence the real value (at least in terms of the various CPI baskets over the years) of the land was maintained. New land purchases were to be included in the asset base at their purchase price, and then indexed by the CPI.

The ACCC also argued that there were complexities in estimating the opportunity cost of Sydney Airport's aeronautical land. These included whether purchase or sale of the land (with associated development or clean-up costs respectively) was relevant and the consideration of externalities (costs and benefits) of relocating to a new site (discussed above). Hence it concluded:

> … the Commission [ACCC] is not persuaded that SACL's proposal can be considered a measure of the true opportunity cost of land at Sydney Airport. It also concludes that such an assessment would be highly complex and well beyond the scope of this decision. (ACCC 2001i, p. 141)

Dr Gannon argued that there are practical difficulties with measuring the opportunity cost of land and therefore alternative valuation methodologies, such as indexed historical cost, may have to be used. However, he noted:

> These are poor surrogates as they are unlikely to bear a reliable relationship to the underlying opportunity cost. For example, an indexed historical cost basis (as resorted to by the ACCC …) may have some properties that allow it to serve as a reasonable substitute. But it could result in a valuation that is higher or lower than the real opportunity cost. (sub. DR55, attachment B, pp. 1–2)

The ACCC did not justify using indexed historical cost as an opportunity cost concept, but argued instead that the investment and land use signals that such historical cost pricing provided to SACL would not be inappropriate for efficient decision making. However, it recognised that valuing aeronautical land at current market value would meet this criterion.

The ACCC argued that the relative simplicity of the indexed historic cost approach was a factor in its adoption, because of:

> … the difficulty of tying down an opportunity cost valuation. Given the limited time available to it in making its decision, the Commission [ACCC] considered the alternative of a historic cost based measure. One advantage of this approach is data availability. (sub. DR55, pp. 18–19)

However, assumptions must be made regarding the data used in the calculation — most notably, regarding the price index used. The ACCC used the CPI to inflate the value of past land purchases. But changes in the general level of prices need bear no relation to changes in the opportunity cost of land at Sydney (or any other) airport.

Prices based on the ACCC historical cost valuation do not provide signals to the Government regarding the value that aeronautical users place on the facility compared with its alternative use. The willingness of consumers to pay prices set on the basis of the opportunity cost of using Sydney Airport land (measured by the full market value) would assist the Government in deciding whether an airport is the best use of the land.

F.3 Distributional issues

The value of land chosen in determining a regulated price has major distributional, as well as efficiency, implications. It is argued in section F.1 that the efficient prices for airport services at a congested airport are those that equate demand with the (constrained) supply. A valuation of the airport that uses 'building-block' prices, even those that use the full opportunity cost of the land for purposes other than an airport, are likely to undervalue the airport, in terms of the value that users place on it.

Increases in airport charges to reflect the value placed on using the airport would increase the sale value of Sydney Airport — a benefit that would accrue to the Government and the community at large. Lower charges, and a sale price based on these, imply that rents accrue to parties other than the owner or operator of the airport. Some of these rents currently support the reservation of slots (and low charges) for regional airlines. Some accrue to major airlines (and their shareholders) and are reflected in the high yields obtainable on peak-hour flights into and out of Sydney. In part, these high yields may support flights between other destinations on which yields may cover marginal, but not average, costs.

G Economic regulation of privatised airports: international experiences

This appendix focuses on economic regulation of privatised airports in the United Kingdom, New Zealand, Germany and Denmark. Airports in these countries are (generally) similar in ownership and structure to those in Australia, as they tend to be privately owned and are run as commercial enterprises. Economic regulation at major airports that are wholly-government-owned, or run as non-profit organisations, such as those in the United States and Canada, is not examined.

G.1 United Kingdom

The sale of the British Airports Authority (BAA) by public float in 1987 — becoming BAA plc in the process — was one of the first (and largest) sales of government-owned airport infrastructure in the OECD.[1]

BAA was established initially in 1966, as an independent commercial enterprise under government ownership, to manage four airports — the three major London airports (Heathrow, Gatwick and Stansted) and one in Scotland (Prestwick). Between 1966 and 1987, BAA acquired a further three Scottish Airports — Edinburgh in 1971, and Aberdeen and Glasgow in 1975. Following privatisation, BAA plc purchased Southampton Airport and sold Prestwick Airport.

A number of UK airports were corporatised around the same time as the privatisation of BAA. Many of these corporatised airports have since been privatised — currently around two-thirds of airports regulated by the Civil Aviation Authority (CAA) (see below) have been privatised to some extent (MTAA Super Fund, sub. 22). Local government ownership of airports is also common, even for large airports such as Manchester.

1 BAA was privatised under the Airports Act 1986 and 500 million shares were sold on the London Stock Exchange in July 1987.

Economic regulation of airports

There are two levels of economic regulation of airports in the United Kingdom. For a small number of 'designated' airports that are considered to have significant market power, economic regulation consists of a Retail Price Index (RPI)-X price cap. The second level comprises a system of light-handed regulation for airports that achieve a pre-determined revenue threshold.

Economic regulation of airports in the United Kingdom is detailed in the Airports Act 1986 and the Civil Aviation Authority (Economic Regulation of Airports) Regulations 1986 (CAA 2000b). Regulation is administered by the CAA. As the airport regulator, the CAA is given a number of objectives to pursue under the legislation. These include:

- to further the reasonable interests of users of airports;
- to promote the efficient, economic and profitable operation of such airports; and
- to encourage investment in new facilities at airports in time to satisfy anticipated demands by users of such airports.[2]

Light-handed regulation

A system of light-handed regulation applies to airports at which annual turnover has exceeded £1 million pounds in two of the previous three financial years.[3] Airports that meet the revenue threshold must apply to the CAA for permission to levy airport charges (once granted, the permission remains in force until revoked). As of March 2000, 47 airports in the United Kingdom held CAA permission to levy charges, including the four designated airports and all of BAA plc's airports.

A key component of the system is public disclosure of airport charges and accounts. All airports holding CAA permission must provide the CAA with their annual statutory accounts, schedules of airport charges and changes (if any) to the information provided in their original application. Airports do not need to seek

2 However, unlike other UK regulators, the CAA has been given no specific duty to promote, or even to facilitate, competition (Cotterill 1999).

3 Airports currently excluded from regulation under the Airports Act (or the Airports (Northern Ireland) Order) are those in the Isle of Man and Channel Islands, those owned or managed by the CAA or a CAA subsidiary and those managed by the Government. An airport becomes subject to economic regulation by the CAA nine months from the end of the financial year in which it first meets the turnover qualification. Should the annual turnover at a regulated airport fall below £1 million for two years, the Secretary of State may determine that the airport shall cease to be regulated.

CAA approval before they revise their airport charges but must notify the CAA of the charges before they take effect.

There also is provision for placing further restrictions if an airport is considered to have abused market power.

First, restrictions can result from complaints brought against an airport operator by airport users and others (including other airports) for pursuing a course of conduct specified in the Airports Act. In broad terms, complaints may be brought against an airport that:

- unreasonably discriminates against any class of users (or a particular user) of the airport; or
- unfairly exploits its bargaining position relative to users generally; or
- levies charges that are both unduly low and cause damage, or are designed to cause damage, to another airport (CAA 2000b).

If the CAA considers that there is a case to answer, it will investigate and, where necessary, recommend actions or impose 'conditions' on the airport to rectify the situation.

Second, there is the threat that an airport may become designated by the Minister of State under s. 40 of the Airports Act and, consequently, be subject to price-cap regulation. While there are no formal criteria for designation in the Airports Act, the Government has stated that it considers the relevant criteria are:

- the market position of the airport, including the degree of competition from other airports and other modes;
- *prima facie* evidence of excessive profitability or abuse of a monopoly position;
- the scale and timing of investment, and the implications for profitability; and
- the efficiency and quality of service (CAA 2000a).

Economic regulation at designated airports

As noted above, under the Airports Act, there are provisions for airports to be designated and become subject to more restrictive regulation than those airports holding CAA permission. Current designated airports in the United Kingdom are Heathrow, Gatwick and Stansted in London, and the major international airport in the north of England, Manchester.

Designated airports must adhere to a number of conditions in addition to those applying to airports holding CAA permission. An accounts condition, for example,

requires designated airports to reveal, among other things, the revenue and costs from three classifications of their activities: airport activities, other airport-related activities and non-airport activities (CAA 2000b).

The principal feature of economic regulation of designated airports is the price cap. In practice, economic regulation of designated airports is a hybrid model of price-cap and rate-of-return regulation. The price cap, which is similar to the price caps commonly applied to other regulated industries in the United Kingdom, comprises a RPI-X price cap applied in the form of an average revenue yield per passenger (Cotterill 1999). Airport charges subject to the price cap are those associated with the landing, take-off, and parking of aircraft, and with the processing of passengers through the terminals. As individual charges are not subject to the price cap, the airport operator has a degree of discretion with respect to the level of each individual charge and the relationship between them (Starkie 2001c).[4]

Application of the RPI-X price cap at designated airports differs from other UK-regulated industries subject to a price cap in that, when resetting the price cap, the CAA adopts a single-till approach. Under the single till, future revenues and costs are assessed on an airport-wide basis to determine allowable average revenue yield per passenger. That is, the regulator takes into account not only the revenue generated from aeronautical services, but also the revenue generated by activities such as retailing, and the provision of rental property and other services to tenants and licensees (box G.1).

The price-cap approach to the regulation of designated airports has been in place since 1987. The cap is reset every five years by the CAA, in conjunction with the Competition Commission,[5] after an extensive review process. Every quinquennial review begins with a reference to the Competition Council, which is given six months to report its analysis and recommendations concerning the price cap, and any conclusions as to whether the airport company has acted against the public interest. The Competition Council's recommendations are then made available to the public by the CAA for consultation and comment. Finally, the CAA announces its findings on the price cap, and also indicates how it intends to implement any public interest findings.

4 At BAA plc's designated airports, a single revenue yield price cap applies to Heathrow and Gatwick airports and a separate cap applies to Stansted (subject to the constraint that the charge differential between Heathrow and Gatwick is required to increase by at least one percentage point per year) (CAA 2001b). The allowable rate of return for BAA plc implicit in the price-cap calculations for the period 1997–2002 was 7.5 per cent.

5 Formerly the Monopolies and Mergers Commission.

Box G.1 **UK approach to single-till price-cap regulation**

The Civil Aviation Authority and the Competition Council undertake a review process to reset the Retail Price Index-X price cap at designated airports every five years (although this process is currently under review). The price-cap model used is similar to price caps applied in other UK regulated industries, except that a single-till approach is used to calculate the revenues the airport may earn from the provision of aeronautical services.

The procedure for calculating the price cap at designated airports under the single till comprises four main steps.

1. An agreed program of capital expenditure for the airport is determined. In addition, based on consultation between the regulators, the airports, airport users and other interested parties, the regulator determines, for the coming five-year period, estimates of:
   - traffic and passenger numbers;
   - operational expenditure; and
   - commercial revenues (revenues from non-aeronautical services).
2. The value of the airport's asset base is derived, and an allowable risk-adjusted rate of return is determined by the regulator.
3. The overall revenue required by the airport to achieve the approved rate of return is then estimated. The estimated commercial revenues are then subtracted from the overall revenue requirement to obtain the residual revenue requirement.
4. The residual revenue requirement is what airports may earn from charges from the provision of aeronautical services under the price cap. The Xs, which are set by the regulator, are estimated to allow the airport to recover the residual revenue requirement.

Source: Kunz (2001).

There is no explicit access regime for airports in the United Kingdom. There are general provisions for determinations to be made on access to 'essential' facilities on a case-by-case basis under UK and European law (ACCC, sub. 36; PC 2001a).

The UK experience with economic regulation of airports

As noted previously, price regulation at designated airports has differed from other UK industries subject to a price cap in the application of a single till. The single-till approach to airport regulation in the United Kingdom stemmed from international

treaty obligations[6] and concerns over equity and distribution. Cotterill noted that distributional concerns have continued to be used as an argument to support the use of the single till:

> … [the Monopolies and Mergers Commission in the 1997 quinquennial reviews] pointed for example to the large windfall profits which removal of the single till would mean for the airport companies at the expense of the airlines and the universally adverse reaction of the airlines to such a change. (Cotterill 1999, p. 4)

However, as reflected in the CAA findings in the current review (see below), it appears that the objectives of the regulation (outlined earlier) are not being met. As discussed below, significant concerns have been raised that the regulatory system is proving to be an impediment to the efficient pricing of current airport facilities, and that it is not providing the appropriate incentives to encourage investment in major airport infrastructure, such as runways and terminals. Other issues raised in relation to the regulatory system include the potential for gaming to occur, and the high compliance costs of the system.

Particular issues include the following.

- The regulatory system may cause some reluctance by airport operators to invest in large infrastructure projects (such as new runways and terminals). Apart from regulatory uncertainty associated with such long-term investment, there is the possibility that the existing system of slot allocation (where airlines have de-facto property rights to the scarcity value of the slots) combined with the single till, does not allow the airport operator to realise the full value of the capacity expansion (Cotterill 1999).
- The single till has been criticised for reducing aeronautical charges at congested airports below market-clearing levels and sometimes below the resource costs of providing the airside services (Starkie 2001b).
- Other incentive problems relate to the denominator of the price cap — passenger numbers. This may encourage airports to focus on passenger volumes at the expense of other outputs (eg aircraft movements that do not generate any additional passengers). There is little incentive to attract such traffic if the resulting revenues must be offset by reductions in revenue elsewhere (CAA 2001b).
- There is potential for gaming because of the information asymmetry that exists between the regulator and the airport operator. The regulator does not have good information on the airport operator's ability to achieve cost efficiencies or to

6 Until 1991, the UK Government was committed to applying the single-till principle under the terms of the Bermuda II Air Agreement with the United States, although this is no longer the case (Starkie and Yarrow 2000).

invest efficiently. Airport operators potentially can game the system, for example, by inflating recorded and projected costs in order to obtain a 'looser' price cap, or by putting forward investment proposals that are 'gold plated' or are not demanded by users (CAA 2000g; Kunz 2001).[7] The CAA also noted the possibility of gaming by airport users (CAA 2001c).

The experience of the UK regulatory system with light-handed regulation of non-designated airports holding a CAA permission are less well-documented. The CAA, for instance, is not examining the effectiveness of this approach to regulation as part of its current review. However, there is some evidence that the threat of designation under the Airports Act acts as a deterrent to the potential abuse of any market power (Kunz 1999; Starkie 2001b). BAA plc's Scottish airports were subject to a designation application, which the Government rejected because there was no evidence of abuse of a monopoly position or inefficiency. When announcing its decision, the Government added that it believed the threat of designation provided a strong incentive for BAA plc to control its charges. Possibly reflecting this, BAA plc capped its prices at both Glasgow and Edinburgh airports on a voluntary basis, initially with the formula RPI-3 (Starkie 2001b).

Preliminary findings of the UK regulatory review

The CAA, as part of its current quinquennial review of price caps at designated airports, is undertaking a fundamental review of its approach to the economic regulation of airports within the existing framework of the Airports Act (the review is to determine how the price caps should be set for the period 2003–08 and beyond). The review is broad ranging in scope, and has arisen out of concerns that the current regulatory framework is not best suited to address a number of issues that have emerged or intensified in recent years. These include:

- that demand for access to Heathrow and Gatwick airports exceeds available capacity;
- in the absence of an efficient market for take-off and landing slots, utilisation of existing capacity may not be optimal;
- whether incentives for the promotion of appropriate investment in capacity are efficient;
- the importance of unregulated revenue in setting charges; and

7 The CAA, as part of its current review of the price-cap regulation, is examining a number of options that might result in a lessening of the potential to game. These include the use of benchmarking (CAA 2000g) and a 'default' price cap (CAA 2001a).

- the importance of service quality for customers and consumers, and the wide variation in quality that different users may require (CAA 2000c).

The CAA (2001c) released its preliminary conclusions in November 2001. After examining several options for setting price caps, it recommended substantial changes to the way the caps are applied. In particular, it recommended a move to dual-till price caps for all four designated airports. The single-till approach was seen as being particularly unsuitable at the capacity-constrained Heathrow and Gatwick airports because:

- under conditions of excess demand, the single till was an inefficient way of allocating scarce capacity; and
- it did not provide airports with good incentives to invest optimally.

The CAA noted that the argument against the single till was not as strong at Stansted and Manchester airports (which currently are not congested). For a number of reasons, however, the CAA recommended that the single till should not be applied at either airport.

- Stansted currently faces competition from Luton Airport, so it is not clear that it has monopoly power. Thus:

  > … the case for retaining the single till at Stansted is a trade-off between a minimal or non-existent gain in restraining prices with the costs and distortions that persisting with a wider regulatory framework, that was only marginally binding, would generate. (CAA 2001c, p. xvii)

- On the other hand, the CAA was not convinced that Manchester Airport operated in a competitive environment. It also concluded, however, that although Manchester has a significant *local* monopoly it faces more competition than Heathrow and Gatwick. That Manchester 'had not sought to expand passenger numbers through low cost carriers' (CAA 2001c, p. 122) was cited as one indicator of the lack of competition it faces. Given this:

  > … the loss in efficiency from moving to a RRCB [Revised Regulatory Cost Base] price cap may be higher [than at Stansted], but a demonstrated ability to price differentiate and its local government ownership should ensure that any loss in output from a move to a RRCB would still be low. The CAA believes that the distortions caused by regulating the commercial business by retaining the single till would outweigh this loss. (CAA 2001c, p. xvii)

  - The CAA also was concerned about the potential impact of applying the single till at Manchester on inter-airport competition:

    > … Manchester is in a situation where it is subject to increasing, albeit fringe, competition and so tight price cap regulation runs the risk of the most undesirable distortion of all: that low prices set by the dominant firm under regulation may hinder the growth and development of a more competitive airport market.

> Continuing with the single till, which results in airport charges that are below the costs of providing airport services, may have this effect. (CAA 2001c, p. 123)

Moreover, the CAA did not accept that airlines had any intrinsic rights over the commercial revenues generated at airports.

On balance, the CAA found that the existing single-till framework 'is unlikely to be the best basis for meeting its statutory objectives given the challenges now faced over the next five years and beyond' (CAA 2001c, p. xviii).

The CAA recommended as the appropriate basis of the price cap the Revised Regulatory Cost Base (RRCB) at all four designated airports. The RRCB includes only those aeronautical activities in which the airport operator has clear monopoly power. The CAA identified three main reasons for modification of the price-cap framework to the RRCB.

- It would reduce the scope of regulation to core aeronautical activities 'where the airport has a clear monopoly in relation to its users' (CAA 2001c, p. xviii).
- It would generally result in prices that better reflect market conditions at Heathrow and Gatwick airports, though prices would remain 'well below' market clearing levels.
- Profitability of investment in increasing capacity would be increased, 'resulting in a greater likelihood of more investment in aeronautical infrastructure than under a single till' (CAA 2001c, p. xviii).

Other options for setting the cap that were examined by the CAA included: incremental costs, value-based incentives, and contracting between the airport and users.

- The CAA considered that there would be significant benefits — in terms of incentives for both investing in appropriate capacity and cost-effectiveness — if a long-term price path could be set in terms of forward-looking incremental costs.
  - It noted, however, that setting caps on this basis is not straightforward, with risks of both under- and over-estimating costs.
  - At capacity-congested airports (Heathrow and Gatwick), prices would be well above RRCB levels, but would result in improved resource use in the medium term.
- Prices incorporating a premium over costs (value-based incentives) may be appropriate where there is excess demand and 'the value of additional outputs to users may … be much higher than the costs to the airport of delivering those outputs' (CAA 2001c, p. xxi).

- Given that real prices could rise with the new price cap, there would be opportunities for greater contracting within the cap set. The CAA noted that it:

  > … would expect the airports to use this greater latitude pro-actively and responsibly to deliver material benefits in terms of improved investment in service quality and capacity, to engender a greater consensus with its users on the strategic direction being taken and to pursue the objectives desired. (CAA 2001c, p. xxi)

Based on these options, additional modifications were recommended for Heathrow Airport's price cap to create further incentives for investment at the capacity-constrained airport (discussed below).

As well as examining options for the setting of the price cap, the CAA identified a number of other areas where the regulatory framework required improvement, including in relation to service quality, the default price cap, information disclosure and pricing structures.

- The CAA noted that users had expressed concerns about the treatment of service quality. It added, however, that 'specifying and fixing quality standards carries major risks of perverse outcomes, would result in a very detailed oversight of airport operations by the regulator, and would be likely to reduce the accountability of the airports' (CAA 2001c, p. xxii).
- It noted that the default price cap would give protection to users while allowing and encouraging contracting between the airport and users. This would allow services and prices to be tailored to user needs. Where the price cap would be binding, it argued that:

  > … explicit provision should be made in the price cap condition for direct contracts for different levels of service quality, and for specific facilities that would not be counted as airport user charge revenues for the purpose of meeting the price cap limits. The CAA recognises that its provisions will require some degree of regulatory oversight, in order to ensure that direct contracts do not have a serious detrimental impact on those users that remain on the default price cap. (CAA 2001c, p. xxiii)

- The CAA found that none of the designated airports provides sufficient information to help users assess project proposals. It argued that airports should provide further information to users, including demand, capacity and cost projections, service quality, investment plans and resourcing implications. It commented, however, that the CAA 'does not have, and could never have, the information to take ownership of the airports' investment plans, and to attempt to do so would compromise the management and accountability of the airport and its users in delivering services to passengers' (CAA 2001c, p. xxiv).
- The CAA argued that there was considerable scope for improving the use of airport capacity through price differentiation. This could be done through the default price cap, but also through a move to a tariff basket approach. It also

expressed a 'strong view that airports should move to greater peak pricing' (CAA 2001c, p. xxvii). It decided, however, not to impose peak pricing:

> The fact that this [peak pricing] has not been forthcoming … suggests that there are significant costs to the airport in attempting to introduce peak pricing, perhaps in the form of pressure from some groups of users. (CAA 2001c, p. xxvi)

Summary of CAA recommendations

The major thrust of the CAA's preliminary recommendations is to create the right incentives for future investment so as to alleviate the capacity constraints at Heathrow and Gatwick airports, as well as ensuring that similar situations do not arise at the other two designated airports. The CAA also considered that the package contained initiatives to place stronger pressure on the airports to improve their service quality, to move to greater direct contracting, and to improve consultation on airport development.

The price cap recommended to apply at Heathrow Airport is to be based on three components:

- prices for current outputs (up to 70 million passenger movements per annum) based on RRCB;
- higher set prices for additional passenger movements over 70 million passengers per annum, based on the incremental costs of new capacity; and
- a set premium of (indicatively) £300 for each additional aircraft traffic movement above 480 000 per annum.

Gatwick also would move to an RRCB pricing framework, but with no separate returns for additional output. A 'simple' RRCB would apply at Stansted and Manchester.

Recommendations regarding other areas of price regulation included:

- moving to a tariff basket as the basis for the price cap at Heathrow and Gatwick, while continuing with a revenue yield cap at Stansted and Manchester airports;
- strengthening information disclosure and consultation requirements for airports;
- facilitating direct contracting outside the price cap at Heathrow and Gatwick airports, by way of the default price cap (contracting is likely to occur at Stansted and Manchester without the default price cap);
- introducing a service quality term into the price cap at Heathrow and Gatwick airports (and at Stansted and Manchester 'if a strong case is made for it' (CAA 2001c, p. xxviii));

- moving regulation of Stansted Airport to a stand-alone basis, and the ending of any cross-subsidy of Stansted's asset base from charges at Heathrow and Gatwick airports; and
- setting separate price caps at Heathrow and Gatwick airports.

The CAA envisaged that the new prices would be phased in over the five years, rather than being introduced at the start of the period:

> This will give users in particular time to adjust to the new system, and encourage airports to facilitate a move to greater accommodation … within it. (CAA 2001c, p. xxix)

It acknowledged that adopting the RRCB approach would be likely to result in price caps that generally are higher than single-till prices, and a transfer of economic rents to airport operators. With regard to Heathrow and Gatwick, however, it noted that:

> These higher prices [for aeronautical services] are justified on the basis of increasing the prospect that available capacity is utilised as well as possible given the serious levels of unsatisfied demand at these airports at current prices. (CAA 2001c, p. xxix)

The CAA's final report and recommendations are due to be released by the end of February 2002, with the final decision on the price caps to be delivered by end-November 2002.

G.2 New Zealand

Private ownership of major airport infrastructure is a relatively new phenomenon in New Zealand. While eight of New Zealand's major airports were corporatised in the 1980s, including New Zealand's three international (and also largest) airports — Auckland, Wellington and Christchurch — to date, only two have been privatised. Auckland and Wellington moved to majority private ownership when the national government sold its shares in 1998 (51.6 per cent in Auckland by public float, and 66 per cent in Wellington by sale — local governments still own a minority share).[8] Most other airports of commercial significance in New Zealand remain government-owned, usually in the form of joint ownership between the central and local governments.

8 Christchurch Airport was corporatised in 1988 with ownership transferred to Christchurch International Airport Limited, a company jointly owned by the Christchurch City Council (75 per cent) and the New Zealand Government (25 per cent).

Economic regulation of airports

New Zealand has adopted what has been referred to as a 'light-handed' approach, with major airports not subject to any direct economic regulation. Although there are examples internationally of government-owned major airports not subject to direct regulation, indirect economic regulation of privatised airports is more unusual.

The NZ approach to economic regulation of airports is in line with the approach the Government adopted with former state-owned industries in the 1990s. In general, this approach focused on:

- requiring the disclosure of prices, terms and conditions for contractual arrangements, costs, performance measures, and financial performance indicators;
- the use of the Commerce Act 1986 to control anti-competitive behaviour; and
- threats of further regulation, such as price control if market dominance is abused, but perhaps in a different form than was previously employed in New Zealand (PSA 1995).

The aim of this type of light-handed regulation was to facilitate negotiated outcomes between parties, without the need for direct intervention by the Government.

The NZ approach to economic regulation is implemented for airports through the Airport Authorities Act 1966 and the Commerce Act 1986. The Airport Authorities Act requires NZ airport companies to, among other things:

- consult with airlines over charges. Where proper consultation processes are not carried out, airport users can initiate legal proceedings (s. 4.2(a)); and
- disclosure of prices, terms and conditions for contractual arrangements, costs, performance measures and financial performance indicators (s. 3BA).

Airport companies, like other companies in New Zealand, are subject to the general competition law provisions under the Commerce Act. Several sections of the Commerce Act are relevant to the regulation of airports, in particular Part IV, which enables the Governor-General, on the recommendation of the Minister of Commerce, to impose price controls in circumstances of restricted competition.[9]

9 Other sections of relevance include: Part II, which covers restrictive trade practices, and also contains provisions relating to resale price maintenance and market dominance; and Part III, which prevents acquisitions that would result in a dominant position or a strengthening of such a position.

Privatised airports and light-handed regulation

In 1989, the NZ Government commissioned a review into the implications of a light-handed approach to regulation for the 'actual and potential abuse of monopoly power' by airports. The review formed part of the Government's deliberations into an appropriate regulatory framework for the future privatisation of airports. The review considered that a light-handed approach to regulation was appropriate because:

- the major airport users, the airlines, had sufficient countervailing power to counteract the monopoly power of the airport companies which would not be significantly diminished by the sale of the airports to private interests;
- the transparency required by the Airports Authorities Act, through the consultation process, contributed to the exercise of the airlines' countervailing power and that the current level of transparency could be maintained post-privatisation, with some small changes to the legislation;
- there were unlikely to be net efficiency gains from privatising the airports if this was accompanied by increased regulatory intervention; [and]
- the provisions of the Commerce Act, which provide for the application of price controls, act as a constraint on airport pricing, while the prices of services to passengers and visitors to the airport are constrained by actual or potential competition and by other provisions of the Commerce Act … (PSA 1995, p. 15)

The NZ experience with economic regulation of airports

As discussed in chapter 11, there has been considerable debate about the effectiveness of the NZ system. The ability of the system to limit the abuse of any market power held by airports has been questioned and the costs of using the system, both to airports and airport users, allegedly have been high. The regulatory system appears to have been characterised by a high degree of uncertainty, both in terms of its implementation and how it may evolve over time. It also appears that this uncertainty might have contributed to the high costs of using the system.

Since 1989, there have been three reviews of the regulatory system. As the current review commenced at around the same time as the privatisation of Auckland and Wellington airports in 1998, there has been potential for strategic behaviour by both airports and airport users alike in an attempt to influence the outcome of the review.

The regulatory system has resulted in a high incidence of litigation between airlines and airport operators and (in some instances) the Government, in part over interpretation of key elements of the legislative framework. The most well-documented of these was a case instigated by Air New Zealand and a number of

other parties[10] against Wellington International Airport Limited (WIAL) in 1992 over the meaning of the term 'consultation' in the context of setting airport charges. The action was brought about after a WIAL decision to increase landing charges, which the airlines claimed adversely affected them. In essence, the airlines claimed that WIAL had failed to allow them to put their case because it ended the consultation process too quickly. After the High Court of New Zealand initially found in favour of the airlines, an appeal heard by the Court of Appeal of New Zealand reversed the decision in favour of WIAL (PSA 1995).

The Prices Surveillance Authority (PSA) noted:

> The costs of litigation, including the uncertainty of outcomes, associated with the New Zealand approach have been considerable. These costs appear to have been underestimated in the development of the regulatory framework. Recourse to the Court system has not been shown to be the most appropriate or cost effective way to solve the consultation and pricing disagreements which have arisen. (PSA 1995, p. iii)

Litigation between airports and airlines has also been cited as evidence of the lack of countervailing power of airlines. Under the regulatory system, it has been argued, airlines faced with increased airport charges have had to resort to litigation (PSA 1995). However, the regulatory regime may have promoted the use of litigation. It is also possible that airlines have been exercising countervailing power by initiating or threatening expensive litigation.

The Commerce Commission (CC) noted in general that 'neither Auckland, Wellington or Christchurch international airport[s] are likely to be significantly constrained by the countervailing power of airlines' (CC 2001b, p. 77). Countervailing power of airlines at these airports was said to be constrained as, unlike smaller regional airports, the airports are unlikely to be dependent on a small number of airlines for their business.

A key component of the NZ regulatory framework was threat of explicit price regulation acting as a deterrent to airports exploiting (any) market power in their dealings with airlines. The uncertainty surrounding the regulatory framework through the 1990s has, at various stages, raised questions about the credibility of this threat. Some argued that during the mid-1990s there was very little likelihood of price controls being introduced. In this regard, Kunz noted:

> The NZ Commerce Act is primarily directed towards preventing restrictions on competition not monopoly pricing and, therefore, provides no forceful provisions. It indeed allows for price regulation to be invoked, but unless an expert regulation body

[10] These were Qantas, Bilmans Management Limited (Ansett) and the Board of Airlines Representatives of New Zealand.

> with applicable instruments is at hand, the threat of regulation is not credible at all. (Kunz 1999, p. 39)

The PSA also noted that the disinclination of the NZ Government to introduce price regulation generally reduced the threat of any such regulation being applied to the airports sector:

> … both the Government and the Commerce Commission [in 1995] have made clear their reluctance to implement or recommend price control, thereby undermining the threat of its use. (PSA 1995, p. 11)

However, the CC's current review of the need for price regulation at New Zealand's international airports might have made the threat of price regulation more credible. Forsyth noted the threat of price controls, combined with the current review, 'would be a deterrent to [airport operators] using market power and setting high charges' (2001, p. 12).

Preliminary findings of the NZ regulatory review

The light-handed approach to the economic regulation of some airports in New Zealand currently is under review. The review commenced in 1998 when the NZ Government directed the CC to examine whether price controls should be introduced for airfield activities[11] at Auckland, Wellington and Christchurch airports. Broadly, the terms of reference require the CC to report on four issues:

- whether there is limited competition for airfield activities;
- whether control is necessary or desirable in respect of the charges for airfield activities;
- whether market conditions are such that the Minister should make a recommendation resulting in the imposition of control over such charges; [and]
- the nature and extent of any price control measures that would be introduced (where applicable). (CC 2001a, para. 31)

Although the scope of the review is limited to airfield activities, the terms of reference require the CC to consider the impact of other airport activities. 'However, in reporting to the Minister, the [CC] … intends to confine its recommendations to airfield activities' (CC 2001a, para. 33).

11 The Airport Authorities Amendment Act 1997 defines airfield activities as one of three identified airport activities, the others being: aircraft and freight activities; and specified passenger terminal activities. Airfield activities cover facilities and services that enable the landing and take-off of aircraft, including: the provision of airfields, runways, taxiways, and parking aprons; facilities and services for air traffic and parking control; airfield lighting; and services to maintain and repair airfields, runways, taxiways, and parking aprons for aircraft (CC 2001a).

The CC (2001b) released its draft report in July 2001. The preliminary recommendation is for price controls to be introduced at Auckland Airport only. In addressing the terms of reference for the review, the CC found there is evidence that:

- airfield activities … are supplied or acquired in a market in which competition is limited or is likely to be lessened; [and]
- there is evidence that it is necessary or desirable for the prices of the airfield activities supplied by … [Auckland and Christchurch airports] to be controlled in accordance with the Commerce Act in the interests of the acquirers of airfield activities. (CC 2001b, p. xliv)

However, based on an assessment of the net efficiency benefits of introducing price controls, the CC found that only airfield activities supplied by Auckland Airport should be controlled.

Several participants raised concerns about the methodology used in the CC's draft report. These concerns related to the definition of the aeronautical asset base and its valuation, the modelling of future returns and the dynamic efficiency gains that it estimated would be achieved through price controls (chapter 11).

To consider further the substantive issues raised in response to the draft report, the CC has delayed the release of its final report by six months (until the second quarter of 2002). If price control is recommended in the final report, then a decision on the type of model will be made after a consultation process as required by the Commerce Act.

G.3 Germany

While most major German airports remain subject to some variant of cost-based regulation based on a single till, the recent privatisation of airport infrastructure has been associated with a move to incentive-based regulation. Nonetheless, Hamburg is the only airport where incentive-based regulation has been introduced.[12]

Hamburg Airport was partially privatised in 2000.[13] A new regulatory system was adopted for the privatised airport, specified in a public contract between Hamburg Airport and the Ministry of Economic Affairs of Hamburg. The contract is in place for five years, from the beginning of 2000 to the end of 2004.

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12 A price cap is planned to be introduced at Berlin Brandenburg International Airport when the current privatisation process is completed.

13 Hochtief AirPort GmbH and Aer Rianta acquired a 36 per cent share, with an option for a further 13 per cent. The City of Hamburg remains Hamburg Airport's major shareholder.

The basis of the regulation at Hamburg Airport is a dual-till CPI-X price cap, based on revenue yield per passenger. The price cap applies to landing fees, passenger handling fees, noise level charges and aircraft parking fees. The airport must also attain quality of service targets under the regulatory framework. These include:

- availability of aircraft parking positions;
- availability and punctuality of passenger and baggage transport systems; and
- availability and quality of restaurants and retailers.

The distinctive feature of the price-cap regulation at Hamburg is that it is based on a sliding scale. For the five-year period the price cap is in place, the X value is fixed at 2. However, if in any year growth in passenger numbers at the airport exceeds a threshold number, then the X factor is increased the following year. For every percentage point increase in passenger growth greater than three, X is increased by 0.5. The objective of the sliding scale is to reduce the possibility of the airport achieving 'windfall profits'. There is no provision for the X value to fall if passenger numbers decline (Niemeier 2001).

Capital expenditure is dealt with outside the cap, with proposed projects having to pass a public review process.

G.4 Denmark

The system of economic regulation employed at Copenhagen Airport is another variant of price-cap regulation. The approach has been to implement a system that creates the incentive properties of price-cap regulation but on a more informal basis than those used at airports in the United Kingdom and Germany.

Copenhagen Airport is owned and operated by a publicly listed company, Københavns Lufthavne A/S, although the national Government holds 51 per cent of the shares in the company. The airport is not subject to an explicit price cap, but it is not permitted to increase charges without approval from the national Government. If the airport operator wishes to increase charges, then it has to submit detailed information to the Ministry of Transport, justifying the increase. If airlines wish to dispute the proposed charges, then they can also make a submission to the Ministry.

The approach appears to be designed to provide similar incentives to those that exist with a price cap (by providing airports with an incentive to reduce costs, and airlines with decreasing airport charges in real terms), with the advantage of lower compliance costs compared with more formal price-cap arrangements. However, because any increase in airport charges requires approval from the regulator — which will involve, to some extent, an assessment of the costs, revenues and

profitability of the airport — the system will be subject to some of the problems associated with cost-based regulation discussed above (for example, the information asymmetry and compliance cost issues discussed in section G.1).

While there appears to be no formal criteria against which proposals are judged, the Ministry of Transport has stated that the airport should be allowed to make a reasonable profit (TRL 2000b). Since 1992, there has only been one price increase at Copenhagen Airport — a 15 per cent increase in 1999. This increase was associated with the abolition of the availability of duty-free goods on intra-European travel in June of that year.

G.5 Summary of international experiences

As the above case studies illustrate, there is no universal approach to economic regulation of privatised airports internationally. The mix of regulatory and market mechanisms adopted by governments, with respect to the provision of aeronautical services at major airports, differs substantially between (and sometimes within) countries.

Some of the experiences of the UK approach to regulation at designated airports highlight a number of difficulties with maintaining price caps in the long term. The CAA has sought to address some of these issues, such as investment incentives, in its current review. To this end, it has recommended moving to dual-till price caps and encouraging direct contracting between airports and their users.

The regulatory systems introduced by governments in Germany (Hamburg Airport) and Denmark (Copenhagen Airport) represent, in part, different attempts to deal with some of the incentive problems that arise under long-term, price-cap regulation. The sliding-scale approach at Hamburg Airport, where the X values are increased during periods when airports are likely to earn 'windfall' profits, is an attempt to ensure that airport operators share profits with airport users through lower prices. In contrast, in Denmark, by not having any systematic review of the price cap at Copenhagen Airport, airport operators are able to retain any profits as long as nominal prices remain unchanged. This reduces the incidence of intervention by the regulator, and airports are free to pursue efficiency objectives, as the benefits can be retained.

The NZ approach is unusual in that there is currently no direct economic regulation. Instead, the system relies on the countervailing power of airlines and the threat of direct price regulation should airport operators abuse any market power they hold. There has been considerable debate about the effectiveness of the NZ system. Although it has resulted in a high degree of litigation, this may reflect its design

rather than an ineffectiveness of light-handed regulation. Further, despite some shortcomings in its application, price and rate-of-return outcomes do not appear to have been excessive, and price agreements have been reached between some airports and their major customers (chapter 11).

The procedural problems experienced in New Zealand do not appear to have occurred in the light-handed system of regulation employed in the United Kingdom for non-designated airports holding CAA permission. The attributes of the UK system, such as having a credible threat of future price regulation (as demonstrated with the price-cap regulation at designated airports), combined with the complaints system available to airport users (and others), appear to have been reasonably successful in preventing the abuse of any monopoly power by airports and in achieving efficient outcomes.

H Issues in allocating scarce airport slots

In its draft report, the Commission suggested, in relation to Sydney Airport, that airport charges that cleared the market for landing slots were likely to promote more efficient outcomes compared with non-price allocation mechanisms, including the current slot allocation scheme. This conclusion elicited comments and criticisms from several participants.

In particular, Network Economics Consulting Group (NECG), in a report commissioned by the ACCC (sub. DR55, attachment A), argued that the Commission, in reaching this conclusion *inter alia* had erred in not analysing the problem as a 'congestion externality' and also (it claimed), in presuming that it would be preferable for scarcity rents to accrue to airport operators rather than airport users. The ACCC commented:

> Many factors are relevant to the choice of demand management instruments. The PC [Productivity Commission] has recommended a pricing approach, but without considering the alternatives or the merits of those alternatives. (sub. DR55, p. 17)

This appendix explores in more detail some issues relating to efficient rationing of scarce airport slot capacity. Though allocation of slots has particular relevance to Sydney Airport (where hourly aircraft movements are restricted and a curfew applies), other Australian airports experience excess demand for some facilities at certain times of day or more occasionally. Capacity constraints also may become of greater importance to them in the future whether due to exogenously-imposed movement limits (eg curfews), environmental concerns or possible consequences of price regulation on new investment.

H.1 Airports and congestion

As noted, NECG criticised the draft report for failing to analyse excess demand for slots at Sydney Airport as a congestion externality issue. The Commission, however, does not accept that this is the most appropriate framework in which to analyse scarce slot capacity when the number of available slots has been fixed, and where this constraint is binding.

Congestion refers to a situation where use of a facility by one party imposes costs (delays etc) on other users, and vice versa. NECG defined congestion in a submission to a concurrent Commission inquiry (Radiocommunications Acts) as:

> … the impedence users impose on each other in conditions where the use of the system by means of which the service is provided approaches its capacity limits. The ensuing outcome reflects a negative externality, namely that the attempted consumption of an additional unit will lower the utility derived from total realised consumption. (NECG 2001a, p. 8)

Thus, while congestion is a means of rationing capacity, it may impose efficiency costs by expanding use beyond the socially-optimal level. (The efficient level is set where the marginal opportunity costs (including marginal congestion costs) equal the marginal benefits of using the service.) Essentially, congestion arises when the services produced by a facility are not, or feasibly cannot be, priced,[1] or where transaction costs prohibit effective negotiation between the parties that generate and are affected by the congestion. In the absence of these 'market' solutions, taxes could be imposed so that users are faced with the costs they impose on others, or the socially-optimal level of use could be fixed by a quantity limit. In practice, the difficulty is knowing the optimum level, while the costs of applying any 'solution' must also be weighed against the benefits gained.

In the case of Sydney Airport, capacity is restricted to a maximum of 80 movements per hour (during non-curfew times), imposed by regulation. This limit largely reflects community concerns about noise, loss of amenity and so on.[2] It does not appear to be directed at reducing congestion costs though it probably has this effect. This is not to say that the slot limit sets the socially-optimal level of use of the airport, after taking into account all social costs and benefits. But, it is the outcome of a political process and the Government has stated that it will not be altered (Anderson 2000).

Once the number of airport slots is fixed *for whatever reason*, and the slot limit is binding, the issue is not one of *additional* use of the airport generating congestion externalities, because additional use is not permitted. There may still be some congestion at the airport consistent with the level of use allowed by the slot limit but, at the margin, the slot limit (when binding) will set the level of use, not average

1 In other words whether property rights can be adequately defined and enforced (that is, whether the services are 'public' or 'private'). The services of airports seem to meet most of the requirements of private goods.

2 Noise levies also apply to certain jet aircraft; these roughly average about $2 per arriving passenger (chapter 3).

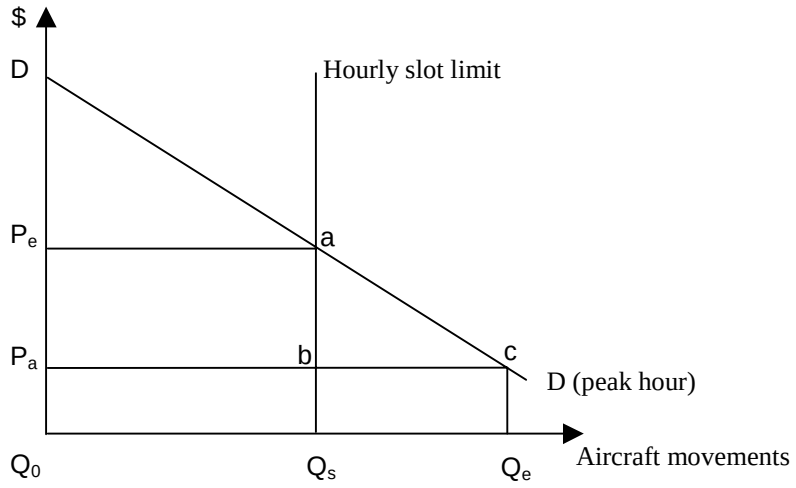
costs (including average congestion costs).[3] Additional units of demand do not add to congestion; rather, additional units of demand are competing for a fixed number of slots (Forsyth 1997). The problem becomes one of allocating those scarce slots.

Congestion may ration use of *other* airport facilities where access is not controlled or directly priced — for example, on landside access roads and inside terminals. But this does not seem to be a significant matter for most of these facilities, and easing such congestion is in the interests and, in general, under the control of the airports.

H.2 Price or quantity rationing?

If landing and take-off intervals or 'slots' are limited by regulation, then any excess demand for a particular slot or cluster of slots will require some form of rationing to equate demand with supply. Figure H.1 depicts the market for slots over, say, a one-hour period. DD is the demand for slots over a one-hour period. As drawn, the availability of slots in any one-hour period is restricted to Q_0Q_s. The market-clearing price for these slots, P_e, exceeds the cost of supplying them.[4] The regulated airport charge is P_a, assumed equal to average costs.[5]

Figure H.1 **Market for peak-hour slots**



As drawn, the imposed quantity constraint generates a loss of surplus equal to the triangle abc; or the cost of limited capacity, relative to unconstrained capacity. This

3 That is, average costs (including congestion costs) will not lie above the point where demand equals the fixed supply of slots. Marginal costs may equal, lie above or below this point.

4 The market-clearing price of course will vary with shifts in demand.

5 This charge might have been set such that the airport is expected to cover its average costs, given total anticipated utilisation levels of the airport over the relevant regulatory period. For example, it may be a charge estimated on the basis of a cost building-block methodology.

loss occurs whichever method for eliminating excess demand is used. Of course, there may be no such loss, when all factors are considered, if the constraint were imposed to address congestion or other externalities. For example, if the restriction reduced congestion, promoted safety or reduced noise, there may be a net social benefit in restricting use to Q_0Q_s.

At issue is which mechanism should be used to allocate Q_0Q_s slots, given excess demand equal to Q_sQ_e at price P_a. There are two broad options for rationing excess demand: price rationing and non-price rationing. *Non-price rationing* can involve either formal mechanisms such as administered allocation, or informal mechanisms (essentially queuing). (Non-price rationing will be combined with some price rationing if price P_a prevails. That is, if slots were free, then demand would exceed Q_e.) *Price rationing* involves pricing slots in some way. It could involve a higher charge for each time a slot is used and/or the sale or lease of scarce slots at specified times for a specified period.

Rationing by queuing

If slots are neither fully priced nor systematically allocated to users, then rationing will occur automatically by queuing. For example, planes could be placed in holding patterns or some could delay their departure from other airports. Queuing in regulated airspace could be viewed as a form of congestion, though there are rules preventing encroachment on the airspace of another plane. The main 'externality' will be that the average time required to reach (or depart from) the airport (at times of excess demand) will increase, with delays and disruptions to schedules.

This method of equilibrating the market involves real resource costs — the value of time spent queuing, the opportunity cost of aircraft and crews, and additional direct costs (including the cost of fuel incurred by airlines). In effect, the market-clearing price P_e will be paid (figure H.1), but with part of this price paid in money (P_a) to the airport and the remainder (P_e minus P_a) paid in queuing costs.[6] Passengers will tend to pay the equilibrium price either as the value of their time forgone and/or through higher fares reflecting additional costs incurred by airlines. Thus the rectangle of surplus P_aP_eab is likely to be eroded entirely by queuing costs. Airport operators would continue to receive price P_a and thus revenue equal to their total costs.

6 Strictly speaking, the demand curve will differ from the normal demand curve when goods and services are allocated by queuing etc. This demand curve will reflect willingness to queue rather than willingness to pay.

In addition, it is possible that some airlines and consumers who value the slots at less than their market-clearing value (P_e as drawn) gain access at the expense of those prepared to pay at least that market-clearing value. The additional costs per passenger of circling above the airport for an aircraft, for example, may be roughly the same as the additional costs incurred by a larger aircraft. This could make it worthwhile for the small plane (and its passengers) to join the queue and compete for the valuable slot. To the extent that users with lower valuations of the slots gain access at the expense of those with higher valuations, additional surplus could be forgone.

Administered allocation

In Australia, access to limited slots at Sydney Airport is regulated by a non-price 'demand management' scheme administered by Airport Coordination Australia (chapter 3, box 3.4). Airline requests for slots are dealt with according to rules of priority and slot availability. Officially, airlines cannot buy or sell allocated slots, though they are permitted to swap slots (barter) with each other. Airlines may forfeit slots if they are not used to a specified minimum level over a 'season' but, essentially, the airline is given an indefinite right of access to the airport and the future revenue stream associated with that right. (The value of this revenue stream will depend critically on the future level of airport charges and slot availability.) These arrangements are typical of slot allocation systems worldwide and reflect international guidelines established by the International Air Transport Association (IATA).

In addition, at Sydney Airport, the Commonwealth Government quarantines slots for regional airlines — the 'regional ring fence'. This means that a certain proportion of available slots is reserved for regional flights. With slots allocated to airlines in this way, the price paid by airlines to use the airport continues to be P_a in figure H.1. Rather than allowing the price to rise, supply and demand are equilibrated by administratively allocating slots among airlines.

Restricted airport capacity translates into restricted aircraft capacity — airlines ration seats at the constrained times by increasing prices above costs. Some airlines receiving a slot may service a pool of passengers (for example, business travellers at peak times) who would be prepared to pay a fare that would at least yield the market-clearing price (P_e) for that slot. Airlines in this category can be expected to use price to ration seats on aircraft such that, on average, they increase average fares on the route at periods of excess demand such that a typical flight at the busy period earns a revenue premium equivalent to P_aP_e. (The UK Civil Aviation Authority (CAA 2001c) observed that the cheapest quoted return airfares (on the same carrier)

from Dublin to Heathrow are £58 higher than fares from Dublin to Gatwick. This difference is not explained by differences in airport charges.)

However, with slots allocated rather than priced to clear the market, some slot holders are likely to service markets in which passengers, on average, have lower valuations of the slot (eg tourists who are less time sensitive). Slot holders in this category will also tend to use price to ration seats but they will receive an average fare premium somewhat smaller than P_aP_e.

A formal quantity rationing scheme (where secondary slot trading is *not* permitted) could achieve the same allocation as achieved by price rationing, so airlines with passengers with the highest valuations obtain access at price P_a. If this were to occur, airlines would capture the area of surplus P_eP_aba in figure H.1. However, in practice, even if such an efficient allocation were sought, it is highly unlikely that it could ever be achieved. This is because there is no mechanism for gauging the slot valuations of the various user airlines. Typically, however, such schemes are designed to bring about a somewhat different allocation, reflecting community or other objectives. Nonetheless, any move away from an 'efficient' allocation will reduce potential economic surplus, and this cost has to be weighed against the benefits of overriding that allocation.

Rent-seeking also is likely to be a source of efficiency loss. As noted above, if some slot recipients carry passengers who place, on average, a relatively low value on the slot (giving yields of somewhere between P_a and P_e), some potential surplus will be forfeited. An airline that could capture some of this potential rent (by providing more flights to passengers with a higher willingness to pay) will have an incentive to obtain premium slots by swapping with other airlines or by employing other means (for example, under-the-table payments, or even via company merger or takeover). Such efforts, to the extent they are successful, will promote a more efficient (although unlikely to be optimal) allocation of slots. Whether successful or not, they are likely to involve real costs, such as the cost of negotiating swaps, that dissipate potential surplus.

Airlines with slot allocations that are more valuable to others also may use up resources (eg persist with inefficient schedules and inappropriate plane size) to retain allocations for their future use or to prevent new entrants. They have an incentive to do this if the cost of holding the slot is low relative to the value of the slot to potential competitors. It also is possible that airlines use some of the rents that accrue from slot allocations to cover fixed costs of other flights.

Price rationing

Airport slots can be price rationed in various ways, ranging from charges for using a slot, to the sale of future access rights to, for example, a daily or weekly slot or to a bundle of such slots. As discussed below, the prices that airlines are willing to pay for future slot rights will be highly sensitive to user charges levied by airports and potential changes in slot capacity. In other words, defining future rights and conditions of airport access may be difficult unless constraints are imposed, or agreements reached, on future airport pricing and investment.

Charges for airport use

Traditionally, airports have charged for aircraft landings and sometimes for take-offs. Thus they charge for *use* of the runway and related infrastructure. As discussed in chapter 7, a profit-maximising airport operator has a strong incentive to introduce efficient peak charges to ensure that the airport extracts scarcity rents. As also discussed in chapter 7, as well as higher charges at peak times, efficient pricing of scarce runway capacity is likely to require charges to be levied in a way that is invariant to plane size (for example, a fixed fee per landing, unless plane size affects time spent landing and taking off). This will facilitate access at such times of larger planes with higher payloads at the expense of smaller ones with lower payloads.

In figure H.1, and assuming that peak demand is stable (implications of demand volatility are discussed below), if user charges (rather than the sale of slots) were used to allocate scarce runway capacity, then the price of using a slot at the peak would rise to P_e to clear the market.[7] At this price, the airport would retain scarcity rents equal to P_eP_aba.

Whether the airport earned higher profits overall would depend on charges levied at off-peak times. If the latter fall to their short-run marginal cost, overall, the airport may continue just to cover total costs.[8] In other words, revenues generated by the

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7 This assumes independent demands between peak and off-peak times. If demands are interdependent, then the price rise required at peak times may be somewhat less than this.

8 NECG (ACCC, sub. DR55, attachment A) suggested that off-peak charges could be pushed to zero to ensure that the revenue constraint is not breached by peak prices. If the revenue constraint is fixed, such restructuring may promote efficiency, by providing scope for even higher peak prices and a greater differential between peak and off-peak charges. However, it is difficult to see why off-peak users should pay a price below the short-run marginal cost of operating the airport at these times, just to ensure that the airport does not make profits in excess of 'normal' levels. Moreover, unless costs fall as a result, an airport will have little incentive to restructure charges if allowable revenue is fixed.

optimal peak/off-peak price structure feasibly may not exceed cost-related revenue constraints. However, there is no *a priori* reason that efficient peak and off-peak pricing will or should generate this result.

If demand fluctuates from day to day, the market-clearing user charge will need to adjust to clear the market. As it is unlikely that a 'spot' market in slots would be feasible or efficient, airports are likely to set an average peak charge, probably somewhat below P_e. This, then, would require a complementary form of rationing to clear the market. As discussed below, if the airport owns or controls slot rights, it is likely to devise contracts and pricing structures to address this issue. If the airport did not own or control slot rights, the market could be cleared by queuing, formal slot allocation (and slot swapping), or slot trading.

With peak user charges, those airlines and passengers with the highest willingness to pay will obtain access. Passengers not prepared to pay the peak price will shift to flights at different times, use other transport and communications modes or not travel at all. Airlines operating flights that carry insufficient passengers willing to pay the higher charges will reschedule or reduce these flights. Thus peak charges will encourage rationalisation of flight schedules so that each flight carries enough passengers prepared to pay on average the peak charge.

Compared with free allocation of slots, airlines may be less likely to engage in strategies to keep competitors out. Not only would they have to incur the costs of flying the route, but also the higher airport landing charge. However, it is feasible that one airline could buy all available slots with a view to monopolising the industry if access to the slot-constrained airport were critical to network viability.

It also should be noted that allowing an airport to charge market-clearing peak prices effectively would undermine any slot allocation scheme in place unless, for example, some flights were quarantined from the higher charges. Only those airlines operating flights with passengers willing to pay (on average) the higher charges would wish to retain their slots.

Sale or lease of future slot rights

Under the existing slot allocation scheme operating at Sydney Airport and in most other countries, slots can be swapped but, officially, not traded for cash. However, slot trading increasingly has been mooted as one way of promoting more efficient slot allocations. In addition, there has been discussion of selling rather than giving slots to airlines.[9]

9 For a discussion of issues relating to the introduction of slot auctions and slot trading see PC (1998a, chapter 8) and Ewers et al (2001).

If airlines value certainty of airport access (for example, to facilitate scheduling), and property rights for slots could be adequately defined (in the sense of defining *future* rights of access to slots at an airport), slot rights could be leased or sold to airlines.[10] Airlines then would be prepared to pay the discounted value of anticipated scarcity rents (that is, the additional expected fare revenue) for slots. As with market-clearing user charges, slot sales generally would ensure that slots were obtained by those who valued them most.

Future slot rights could be leased or sold to airlines by a body other than the airport (so that, for example, scarcity rents accrued directly to the government). However, in bidding for slots, airlines would take into account anticipated airport user charges; any increases in user charges would reduce the value of a slot. They also would need to take into account the potential for airport expansion, which also could undermine the scarcity premium. In other words, as already noted, defining and pricing rights for future airport slots is inextricably linked to expected future airport pricing and investment behaviour.

If property rights for slots were vested in the airport, the airport operator might introduce a form of two-part pricing, whereby airlines reserved access to the airport at a certain time by purchasing a slot (with these access prices reflecting slot scarcity), and pay a user charge (reflecting airport operating costs) when exercising that access right. Again, how much airlines were prepared to pay for access at a specified time would depend on the user charge and the potential for changes in slot availability. Consequently, airports would have an incentive to sell a 'package' combining clearly-defined slot rights and future user charges. Whether particular slots were reserved or leased (and for what period), sold outright or neither leased nor sold, would depend on an assessment by airlines of the benefits and costs associated with holding future slot rights versus not reserving access and paying on the basis of airport use.

If property rights for future slots were vested with airlines (that is, if slots were *given* to airlines on an indefinite basis or for a fixed period), and trading of these slots permitted, the traded price of slots also would tend to reflect their scarcity value and encourage transfer to their most efficient use. The incentive for an airline to use a slot inefficiently would be reduced (compared to the situation where slot trading is not permitted) because that slot could be sold to another airline. However, incumbent airlines (which have been given slots) may retain an advantage over new airlines (which must buy slots). Even though the opportunity cost of holding a slot

[10] The ACCC (sub. DR55) refers to these allocation mechanisms as market-clearing mechanisms rather than price mechanisms. But the question is not whether the market will clear. Rather, the question is which variable adjusts to equilibrate supply and demand. In the case of slot sales, prices for slots adjust to clear the market.

would increase (reflecting its cash value), incumbent airlines could use the rents they derive from slots to drive down network prices in order to deter new airline entry. In essence, slot quota rents could give incumbents deeper pockets than new entrants. As noted above, slot acquisition could also be used as a monopoly strategy.

H.3 Assessing the options

Desirable properties for an allocation mechanism include that it promotes efficient use of a scarce resource and that it appropriately signals the need for, and encourages, efficient investment to augment that scarce resource.

Queuing

Queuing generally can be ruled out as an efficient rationing mechanism because it uses up real resources to clear the market. It also provides very poor signals about the need for new investment because there is no way of gauging the willingness of queuers to pay for the scarce good or service or for the airport to extract this value from them when prices are regulated. Only their willingness to queue can be ascertained.

Non-price administered allocation

A non-price demand management scheme (where slot trading is *not* permitted) has advantages over queuing to the extent that the value airlines place on the slot exceeds the regulated price. Thus, some of the potential surplus (represented in figure H.1 by the area $dP_a ba$) will not be forfeited. Instead, it will tend to accrue to airlines that hold the slots and that ration, through prices, available seats among passengers. In principle, while an administered allocation could mimic the outcome under price rationing such that all of this surplus is retained, in practice it is highly unlikely that all scarce slots would accrue to those airlines and passengers who value them most highly. This may be deliberate policy, but unless the allocation addresses a market distortion, it comes at an efficiency cost. Also, as mentioned above, as with any quota allocation scheme, slot allocation schemes create incentives for wasteful rent-seeking behaviour by airlines in a bid to obtain or retain valuable slots.

Moreover, with administered allocation (as with queuing), it is very difficult to gauge the need for new airport investment. There is little direct indication to the airport (or, indeed, the government or a regulator) about users' willingness to pay

for airport services and hence whether the benefits from investment will exceed the costs. The existence of excess demand for an under-priced service says very little about whether using up costly resources to expand the facility, or to build a new facility, would be privately and socially efficient. The optimal 'solution' may be just to ration existing capacity more efficiently.

Price rationing

Allocating scarce resources via the price mechanism generally will ensure that those with the highest willingness to pay, obtain slots. This could occur whether pricing occurs via charges for use of the airport or via slot sales and trading (provided property rights for future airport access can be contracted).

As noted above, however, it is possible, if slots initially were given to incumbent airlines while new airline entrants had to purchase slots, that the incumbent would have 'deeper pockets', which could be used to frustrate market entry. Indeed, the incumbent or some other party could buy up all slots. This could lead to inefficient outcomes. On the other hand, the potential for a cash sale increases the opportunity cost of holding a slot.

The ACCC suggested that price rationing using airport user charges is likely to be a very difficult exercise:

> One of the disadvantages of the approach to congestion pricing recommended by the PC is the substantial information required to set efficient prices. This is not a trivial issue. To the contrary it is central to establishing workable regulatory arrangements. Furthermore the potential efficiency losses of getting prices wrong could be substantial. (sub. DR55, p. 17)

Though pricing is a difficult exercise for most industries in the economy, producers generally have an incentive to devise price structures that increase their profits. They also are likely to have better information than most others (except the users) about demand for their product. As discussed in chapter 7, an airport operator facing an exogenously-imposed capacity constraint will have an incentive to devise efficient prices to increase profits. Indeed, for this reason, an airport operator is likely to devise an efficient peak/off-peak price structure (including *marginal* off-peak users paying prices equal or close to short-run marginal cost). Implementing this structure probably will require iterations from time to time (for example, by adjusting discounts/rebates), but this need arises in any market.

That said, as discussed earlier, demand for slots is likely to change from day to day, thus causing the market-clearing price to change. It is unlikely that clearing the market for slots by continual iterations in airport user charges would be efficient. In

particular, many airlines are likely to value certainty of access to the airport and predictable (maximum) future prices. Therefore, efficiency is likely to require user charging combined with some form of slot reservation mechanism. This could be achieved by long-term contracts and pricing structures devised by the airport or airport user charges complemented by an independent slot trading mechanism.

Scope for flexible price structures could be a major advantage of airports controlling slots. Some airlines (sometimes) may choose just to pay as they use the airport, others may wish to enter a contract with the airport to reserve a slot (some for a short period, others for a long period or indefinitely).

As for efficiency over time, the main requirements are that current prices signal the strength of demand for a service, and that the provider has an incentive to invest appropriately, including some expectation of making a reasonable return on the investment required to meet that demand.

The CAA (2001c, p. xiv), while concluding that a 'price cap at market-clearing levels would be likely to improve the use of scarce capacity', also noted that 'while market-clearing prices may provide good signals to the airports of where new capacity is desired, they may not provide good incentives to actually deliver it at the socially desirable time'.

In short, while higher airport charges may signal clearly the need for new investment, that investment may not be forthcoming if the airport retains scarcity rents. As discussed in chapter 7, under certain assumptions, an airport with market power will under-invest to maximise monopoly profits over time. This does not mean that an airport operator will never invest, just that investments will be delayed to maximise profits. Nonetheless, to the extent that price discrimination is feasible and/or additional throughput increases non-aeronautical profits, even an airport with market power will have some incentive to invest efficiently in additional aeronautical capacity. The threat of potential competition (from existing or new airports) also may encourage more efficient investment. It is interesting to note that physical capacity constraints at some airports overseas appear to have arisen with regulated prices held *below* market-clearing levels and apparently below the incremental costs of expanding capacity.

Where a capacity constraint is imposed exogenously to reduce aircraft noise levels, for example, additional runway capacity at that airport may not be considered socially desirable. This may be the case at Sydney Airport. In these circumstances, market-clearing prices will provide information to government and prospective investors about the viability of a second airport. They also will provide information about the costs of the constraints and any policy that quarantines some airport users from market-clearing charges.

Where airlines, rather than airports, obtain scarcity rents, as they do under current allocative arrangements, it is doubtful that investment signals and incentives necessarily will be superior. Certainly when slots cannot be bought and sold, there is virtually no public information about the scarcity value of those slots to airlines — revenue yields on particular flights are not available to airports or governments.[11]

If future slot rights could be bought and sold, there would be some indication of scarcity rents and the willingness to pay for those slots. While this may assist in assessing whether new investment would be socially desirable, the airport will invest only if the regulated price will provide a reasonable return on that investment. Also, just as airports may have an incentive to delay investment, airlines holding slot rights would have an incentive to lobby against any expansion of airport capacity that may undermine their value.

Alternatively, scarcity rents could accrue to governments through slot sales to airlines or, as suggested by the Commission in relation to Sydney Airport, be factored into the sale price for that facility if bidders knew in advance they could charge market-clearing prices.[12] In both cases, prices would give some indication about the need for investment (in Sydney's case, the need for facilities at another site) and, provided the airport operator could obtain a reasonable return on investment, efficient investment would be forthcoming. Nonetheless, issues of sovereign risk could arise if the slot arrangements forming the basis for payments to the government were subsequently changed.

11 In the USA, however, airlines are required to provide information to government about average route yields.

12 The situation at Sydney Airport is somewhat unusual in that additional airport capacity is likely to be developed at another facility. So key objectives for pricing at Sydney Airport are promotion of efficient use of that constrained facility and signalling (to government) when a second facility should be built. If bidders were advised they could set market-clearing prices (and made aware that the government would choose when construction of the second airport would commence), bidders would tailor their bids accordingly.

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