

# **Market power and airports**

## ***Report for the ACCC***

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The Productivity Commission, at the request of the Treasurer, is reviewing the prices oversight arrangements for 22 leased airports in Australia. Twelve of these airports are subject to prices regulation. The Productivity Commission is required to report on the need for continued prices regulation and the appropriate form of this regulation. In its report, the Productivity Commission is required to consider situations where airport operators have potential to abuse market power and alternatives to existing arrangements that provide equal or better protection to airport users.

The relationship between market definition, market power and the abuse of such power has been analysed in detail in Australian and overseas antitrust law and economics. This report summarises the economics of market power and applies this economics to Australian airports. The report does not seek to conclusively determine whether or not these airports have market power. Rather, we will provide a framework for assessing market power both for airports as a whole and for the individual services provided by airports. As such, this report provides guidance for the empirical determination of market power and the potential for any abuse of such power.

The report proceeds as follows. The first section considers the general principles of market definition and market power. This section also provides a framework for considering market power in relation to airports and airport services. Section 2 considers the application of these principles to airports as a whole. The third section considers some of the individual services provided by airports. A final section deals with some specific issues relating to the Australian Competition and Consumer Commission, summarizes the approach presented in the report and concludes.

# 1. The principles of market definition and determination of market power.

## 1.1 Background.

Before it is possible to consider a firm's market power, it is necessary to define the relevant market(s) in which the firm operates. This is not simply a 'legal technicality'. Market definition provides a framework for analyzing the economic factors that affect market power and as such is the first step in market power analysis.

A number of clear principles have been developed under Australian competition laws regarding market definition. The Australian High Court in *Queensland Wire Industries v BHP* defined a market. "A market is the area of close competition between firms or, putting it a little differently, the field of rivalry between them ... Within the bounds of a market there is substitution – substitution between one product and another, and between one source of supply and another, in response to changing prices. So a market is the field of actual and potential transactions between buyers and sellers amongst whom there can be strong substitution, at least in the long run, if given a sufficient price incentive".<sup>1</sup>

A key feature of market definition is that it involves both demand-side and supply-side substitution.<sup>2</sup> In other words, consideration must be taken of both alternative products that are available to consumers and also alternative sources of product supply. The relevant time frame for considering such substitution possibilities must take account of the facts of a specific case, but it should not be 'too short' a time to reflect true substitution possibilities. At the same time the degree of either supply-side or demand-side substitution should not be trivial but should be 'strong'.

Commercial reality must temper any attempt at market definition. While substitution possibilities might theoretically exist, if the evidence shows that these substitution possibilities have failed to eventuate, even though there has been a relevant and

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<sup>1</sup> (1989) 167 CLR at 177.

<sup>2</sup> See also Wilcox, J. in *TPC v Australian Meat Holdings*, (1988), ATPR 40-876 at 49,480.

significant price differential, then it is likely that these possibilities do not commercially exist. For example, there might be barriers to entry or limitations to product substitutability that are not immediately obvious to an outside observer. If what appear to be profitable substitution possibilities have not been pursued over the longer term, then it is reasonable to conclude that these possibilities are not real.

Market definition is not a matter for mechanical analysis. The definition of a market in any matter cannot be separated from the purpose of that definition.<sup>3</sup> In this sense, the determination of the relevant market and the determination of market power are simply two parts of the same question. As the High Court noted when considering abuse of market power under section 46(1) of the *Trade Practices Act* 1974, “there will ordinarily be little point in attempting to define relevant markets without first identifying precisely what it is that is said to have been done in contravention of the section”.<sup>4</sup>

To consider the relationship between market definition and market power, it has been argued that the outside observer needs to ‘put themselves in the shoes’ of the relevant market participants. They need to ask, for example, who are the relevant customers and what options do they have; and who are the important competitors and how quickly can those competitors react to any changes in pricing or operating policies? In brief, from the firm’s perspective, what competitive forces will limit the firm’s behaviour?

Mason first proposed approaching market definition by focusing on the actual market participants.<sup>5</sup> Brunt suggests a three step methodology based on the Mason approach that could be applied to Australian Trade Practices cases. “[O]ne begins with a specification of the conduct claimed to be unlawful...The next question will be: what productive activities of the enterprise generate this conduct? And, finally, what decision making unit

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<sup>3</sup> See for example, French, J. in *Singapore Airlines v Taprobane Tours* (1991) 104 ALR at 633, and *Queensland Wire* op. cit. note 1 at 187.

<sup>4</sup> *Queensland Wire Industries Pty. Ltd. v BHP Co. Ltd.*, op. cit. note .

<sup>5</sup> E.S. Mason “Price and production policies of large scale enterprises”, *American Economic Review* 1939, p66.

within the firm...and what particular product, or set of products, should be the centre-point of the analysis”.<sup>6</sup>

## 1.2 Determining the relevant market

Market definition may be conveniently broken into four separate dimensions – product, functional level, geographic and temporal.<sup>7</sup>

Beginning with the relevant ‘product dimension’ of the market, it is necessary to consider the ability of market participants to respond to prices or price differentials. The relationship between the quantity of one commodity and the price of another commodity is referred to in economics as the ‘cross-price elasticity’ of supply or demand between the two products. Products that have a high cross-price elasticity (in either demand or supply) will generally be considered to be part of the same market.

The cross-price elasticity of good *A* with respect to good *B*, is the percentage change in the quantity of *A* due to a one per cent change in the price of *B* holding all other factors constant. For any two products there are four cross-price elasticities. There is the cross-price elasticity of demand for *A* with respect to *B* and the cross-price elasticity of supply. It is obvious that these need not be the same. The former measures the reactions of buyers while the latter refers to sellers. There are also two cross-price elasticities for *B* with respect to *A*. Elasticity measures need not be symmetric. Products are substitutes in demand and/or supply if the relevant cross-price elasticities are positive. If these elasticities are ‘high enough’ then the products can be viewed as being in the same market.

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<sup>6</sup> M. Brunt “‘Market definition’ issues in Australian and New Zealand trade practices litigation” *Australian Business Law Review* 1990, 18, p105. The Australian courts have recognised the applicability of this Mason / Brunt approach. “Professor Brunt’s article...argues that substitutability is a matter of degree, recognising that the statement of the Mason perspective is not to be too literally applied” (*Davids Holdings Pty. Ltd. & ORS v Attorney General of the Commonwealth & ANOR*, DATE, ATPR 41-804 at 42,087).

<sup>7</sup> See for example *Re Tooth & Co Ltd* (1979) ATPR 40-113 and the ACCC Merger guidelines.

A simple example may help to illustrate the relevant issues. Consider for example that there are two products, rail transport ( $R$ ) and bus transport ( $B$ ). Suppose that at present the price of a bus trip is \$4 and a train journey from the same origin to the same destination costs \$3. There are 100 bus and 2000 rail journeys per day. To determine the cross-price elasticity of demand of  $R$  for  $B$  we need to ask how the volume of rail journeys will alter if the bus fares rise. Consider that the price of a bus journey rises to \$4.40, a 10-percent increase. Suppose that the new sales figures are 50 for bus and 2040 for train. In this example, 40 customers switch from bus to train and 10 either switch to some other unspecified form of transport or do not travel. The 10-percent rise in the price of  $B$  has led to a 2-percent rise in the demand for  $R$ . The cross-elasticity of demand for  $R$  with respect to  $B$  given from these figures is simply 2 divided by 10, or 0.2.

Alternatively, let the bus fare remain constant at \$4 per journey and raise the rail fare to \$3.15. Suppose that after the 5-percent increase in the rail fare the number of bus customers increases to 180, an 80-percent increase. The cross-elasticity of demand for  $B$  with respect to  $R$  is given by 80 divided by 5, or 16.

Clearly, these two elasticity measures are not the same. The relevant measure will depend on the question being asked. The possibility of competition from rail may temper the behaviour of a bus owner given the above figures but not vice-versa. The example also hides a number of important factors. With 'real world' data, we would need to know the time period involved in collection. If quantity responses occurred the day after the relevant price rise then these cross-elasticity's need to be given different consideration than if the quantity responses were measured five years later. Not only would it be unlikely that 'all other factors' would be constant for five years, but the quantity responses may have been very slow. When considering a firm's market power, the length of time involved in customer switching can be crucial.

Quality changes also need to be considered when measuring cross-price elasticities. In the above example, an 80-percent rise in bus passengers without an increase in the number of buses used may lead to a serious deterioration of service. There may be a rationing of the places on a bus at certain peak times, or passengers may be forced to stand for a longer proportion of their trip. If the figures used in our example reflect a

(short-term) quality deterioration then more substitution may have occurred if these deteriorations had not occurred.

Often it will be impossible to calculate a single figure for a particular elasticity. Rather, the degree of substitutability between products needs to be determined from a variety of evidence. At the same time, the use of appropriate ‘counter-factual’ analysis can help clarify the boundaries of the market. A common tool of analysis developed in the United States is the SSNIP test. This test asks whether a monopolist (or monopsonist) operating in a suggested market could impose a small and non-transitory increase in price above a relevant competitive price level. If this could occur then the market definition is either correct or is too broad. However, if the hypothetical monopolist was unable to sustain the price increase, then this failure reflects significant substitution possibilities that are not encompassed by the suggested market, and the suggested market is likely to be too narrowly defined.

Another aid in determining market boundaries is to analyse the relationship between prices in (potentially) different markets. If prices are closely related (or have a high degree of positive correlation) then this suggests that the proposed markets might, in fact, be part of a single market. At the same time, care must be taken with such analysis to avoid spurious causation (for example, where prices are positively correlated simply due to the effects of economy-wide inflation). Smith presents a useful summary of the limitations of this approach as well as its use in Australian courts.<sup>8</sup>

The pattern of actual trade can be important in determining the boundaries of the market. For example, if there is little or no actual movement of product between two potentially separate markets then this raises the likelihood that the markets are, indeed, separate. Care must again be taken as the potential for substitution might significantly constrain conduct in one market without any actual substitution occurring. In such a situation, potential ‘contestability’ might be viewed as either extending the boundaries of the relevant market or, for example, as limiting the market power of a firm in the relevant

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<sup>8</sup> R. Smith “The practical problem of market definition revisited” *Australian Business Law Review* 1995, 23, pp. 52-60.

market. This said, patterns of actual transactions provide important insights into how a firm views its market. Such evidence has been placed before and accepted by the Australian courts (eg: Australian Meat Holdings).

Substitution on the supply-side will depend critically on the barriers to entry either for new firms or for existing firms to provide the service. If there are substantial barriers to a firm providing a relevant service in competition with an incumbent then that firm is not a viable alternative source of supply. Barriers to entry are particularly relevant for airports where competitive provision of some airport services would require more than one airport to operate in the relevant market. The construction of a new airport by a firm that seeks to compete against an incumbent will often prove to be an insurmountable barrier to entry.<sup>9</sup> Building a new airport involves a significant (sunk) investment and would face many regulatory hurdles.

Exit barriers can also reduce supply-side competition. A firm will be more reluctant to enter and compete against an incumbent if that entry is costly to reverse. In contrast, if there are few barriers to entry or exit then 'hit and run' competition can constrain an incumbent's market power.

If we consider the temporal dimension, market definition involves an analysis of substitution possibilities in the 'long run' rather than in the 'short-run'. This said, neither of these terms refers to a specific length of calendar time. Rather, the relevant period of time for the 'long run' will depend on the matter at hand.

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<sup>9</sup> The issue of competing facilities and the constraints placed on incumbents by the ability of firms to build stand-alone facilities is an issue of some controversy. If a market is unlikely to have sufficient demand to support multiple competing facilities and such facilities involve substantial sunk investment costs then it is generally accepted that entry through facility development will provide little if any constraint on an incumbent firm. This will often be relevant for airports in Australia. For example, see Sydney International Airport (2000) Australian Competition Tribunal March 1, at para 84. "The Tribunal heard that most major commercial airports around the world exhibit strong natural monopoly or bottleneck characteristics. Once the basic infrastructure (runways, taxiways, control tower) is in place, the owner faces sharply falling costs of servicing increments in demand (economies of scale). By contrast, a new entrant would have to replicate this basic infrastructure which is inherently capital intensive".

As noted above, the temporal and product dimensions of the market are necessarily entwined. Substitution possibilities can only be considered taking a relevant time frame into account. Failure to consider the relevant time frame can lead to confusion. For example, the ACCC Merger guidelines note arguments about ‘ripple effects’ in markets. If *A* and *B* are substitutable and *B* and *C* are substitutable, should *A* and *C* be considered to be part of the same market? When looking at the potential market power of a firm supplying product *A* the correct response necessarily means considering the time involved for substitution. If a rise in the price of *A* leads to a relatively quick response in the price of product *C*, albeit through the re-pricing of product *B*, and as a result, product *C* constrains the behaviour of the producers of product *A*, then products *A* and *C* are clearly in the same market for the purpose of determining market power.

The geographic dimension of the market will depend on substitutability between otherwise similar products that are produced in different locations. Again, cross price elasticity, price correlations and the SSNIP test provide tools to consider the geographic extent of the market. The ACCC in its merger guidelines notes that the relevant geographic dimension of a market has regard to the availability and convenience of alternative supply, the switching costs associate with alternative supply, transportation costs, actual market behaviour, the nature of the product (eg. ability to store), regulatory or practical constraints on alternative suppliers, and relative prices.

Finally, the functional level of the market refers to the relevant vertical position of the product in the chain of production. For the analysis of market power, consideration must be made to substitution possibilities both within the same level of the production chain and to substitution at another functional level that constrains any market power. For example, consider the transmission of natural gas. Transmission is an upstream input into the production of delivered natural gas. The owner of a transmission pipeline might be constrained in any use of its market power by the existence of an alternative transmission pipeline. Both pipelines would provide services in an upstream ‘transmission’ functional level of gas supply. If this were the only relevant source of competition for the pipeline owner, then the relevant market to consider the pipeline owner’s market power would be a market for natural gas transmission. Alternatively, suppose that alternative sources of energy, such as electricity and oil, provide strong competitive constraints on the retail



price of natural gas. As a result, these competitive alternative energy sources constrain the use of market power throughout the vertical chain of natural gas production. These alternative energy sources will constrain the market power of the transmission pipeline owner and the relevant market for considering the pipeline owner's market power will be the market for energy.

Market definition tends to focus on the 'whole' of the market for the relevant product. At the same time, market power can differ substantially between parts of a market. For example the cross-price elasticities may be reasonably high for two products when all customers are considered, but they may be extremely low for certain customer groups. Two firms may both have significant 'captive' market segments that dominate their pricing strategies, while cross-price elasticities are dominated by those consumers who can swiftly move between the products, even though these consumers have little effect on actual firm behaviour. A similar issue relates to the possibility of price discrimination. A firm may also have considerable market power with respect to some groups of consumers if they are relatively price insensitive, can be distinguished, and resale of the good is limited. The firm may then be able to exercise considerable market power over these groups through price discrimination even if the firm has less power over the broad spectrum of consumers.

There are two ways to deal with the possibility of differential market power. First, it might be the case that the different consumer groups actually represent different markets. In this case, the firm may have significant power in some of its markets but not in other markets even though the physical product traded in these separate markets is very similar or identical. Alternatively, the different customer groups might form submarkets. The Australian courts have recognized that, if a firm holds substantial power in a submarket, then in practical terms it might be viewed as having market power.<sup>10</sup>

### **1.3 Market power.**

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<sup>10</sup> Singapore Airlines, op. cit. note 3.

“Market power can be defined as the ability of a firm to raise prices above the supply cost without rivals taking away customers in due time, supply cost being the minimum cost an efficient firm would incur in producing the product”.<sup>11</sup>

One initial indicator of market power is the share of the relevant firm in the market. A firm that has a relatively small share of sales in the relevant market is unlikely to have significant market power. This initial step is recognized in the ACCC merger guidelines where threshold tests of market power, based on market share and market concentration, are used. The Australian Courts, however, have recognized that market share is not definitive of market power. The ease of entry and exit and the existence of barriers to entry and exit are important factors in relating market share to market power.

A key determinant in considering market power is the ability of the relevant firm to raise its own price without inducing substitution to the products of other firms in the market to such a degree as to render the price rise unprofitable. An empirical measure for such analysis is the own-price elasticity of demand for the firm’s product. This is the percentage change in a firm’s sales that results from a one percent rise in its prices. As with cross-price elasticities, the relevant time frame must be considered when measuring own-price elasticity. Too short a time-frame may mean that a firm is erroneously viewed as having substantial market power. Too long a time frame will lead the observer to discount market power even where there is significant scope for the abuse of such power.

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<sup>11</sup> Queensland Wire, op. cit. note 1 at 189. See also *Dowling v Dalgety Australia Ltd* (1992), 34 FCR 109 at 138. The ACCC, in its “Fuel throughputs levies: report pursuant to the Commission’s monitoring functions under the Prices Surveillance Act 1983”, December 1998, states that, in that report, market power “refers to where a person is in a position substantially to influence a market for goods and services. Thus an ‘abuse of market power’ occurs where the person takes advantage of that market power in setting price” (p.32). The ACCC use this statement to differentiate its approach to market power from that taken, for example, under s.46 of the Trade Practices Act. While the Act refers to a firm “taking advantage” of its market power, which might be viewed as different from an “abuse” of market power, in both circumstances, the concept of market power is unchanged. A firm that lacks market power cannot abuse or take advantage of market power. As such, the distinction made by the Commission in its report would appear to be unnecessary.

The relevant base price for measurement of own-price elasticity is not the actual price set by the firm but the price that corresponds to “the minimum cost that an efficient firm would incur”. It is never profit maximizing for a firm to have a price-sales combination where the elasticity of demand is less than one in absolute value. In such circumstances the firm could always raise profits by increasing price. The rise in price will lead to a lower percentage fall in sales. This raises the firm’s total revenue while the lower output reduces the firm’s total costs. Overall, firm profits rise. Thus, measuring the own-price elasticity of a firm’s demand at its current price is of little benefit. Such a measurement should always show that demand is ‘elastic’ suggesting that there is not significant market power.<sup>12</sup> In particular, for a firm that both has market power and is currently abusing that power by setting a monopoly price, measuring own-price elasticity at the observed market price-output combination may lead the observer to erroneously believe that the firm does not have market power.

The need to measure market power from a (hypothetical) base of a competitive market, and the error associated with using actual market data as if a competitive market generated the data, is shown by the ‘cellophane fallacy’. “The Court investigated whether du Pont had market power in the pricing of cellophane. The Court reasoned that du Pont lacked market power because, at current prices, a user of cellophane had many substitutes, such as paper bags, and du Pont’s share of the market including these substitutes was not large. There was also evidence, however, that price substantially exceeded marginal cost...[It] was an error to include other wrapping materials in the market definition because they did not prevent the exercise of market power and constrain the price of cellophane to competitive levels”.<sup>13</sup>

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<sup>12</sup> Demand is said to be elastic if the own-price elasticity of demand is greater than one in absolute value.

<sup>13</sup> D. Carlton and J. Perloff (1994) *Modern Industrial Organization*, Harper Collins, New York at pp. 805-6.

The cellophane fallacy shows that, when determining market power, the observer needs to consider the behaviour that would exist in a competitive market and how observed behaviour deviates from this competitive standard.<sup>14</sup>

When considering market power it is important to determine whether any party has countervailing power. If countervailing power exists then a firm that has a substantial degree of market power might be unable to exercise that power. For example, suppose an airport only provides services to one airline and this airline can credibly cease to use the services supplied by the airport. Then, even though the airport might be the only seller in the relevant market, it might also have relatively little ability to abuse any market power. Any attempt, for example, to raise the prices that the airport charges, will be opposed by the single buyer and this buyer will have a degree of monopsony power when negotiating with the airport. Overall, the airline and the airport will want to reach an outcome that is mutually efficient, and concerns about an abuse of market power by the airport might be misplaced.

Countervailing power will arise in an otherwise uncompetitive market when buyers have a credible option to cease buying or other ‘outside alternatives’ that are not captured by conventional market analysis. It is enhanced when sellers have little alternative other than to sell their product. In this sense, countervailing power involves considering factors that might be relevant to market place negotiations and that reflect the relative bargaining power of buyers and sellers. The durability of a seller’s output may be relevant. For example, a monopoly farmer, who has a ripening crop, may have little ability to hold back output and raise the price of the product to consumers even in the absence of

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<sup>14</sup> An example of the importance of this fallacy is presented in the ACCC’s “Fuel throughputs levies: report pursuant to the Commission’s monitoring functions under the Prices Surveillance Act 1983”, December 1998. At p.35 the report notes that when one airport raises its price for refueling to “one or two cents” per litre above a competitive level, airlines will find it economically viable to refuel at other airports. But this means that if one airport was already charging one or two cents more than other airports, it would appear to be in a competitive situation. Any further price rise would lead to inter-airport substitution. However, if the airport’s price was compared to a competitive price, it would be obvious that the airport did have market power up to one or two cents per litre and, in fact, was already exercising that power.

product market competition. Each consumer knows that the farmer will want to sell the crop before it spoils and consumers might be able to out-wait any attempt by the farmer to abuse market power. In the extreme, the Coase conjecture posits that even a monopoly firm might have little market power if consumers have the discretion to postpone their purchases and the monopoly is unable to commit not to lower its price in the future.

When analyzing airports, key factors determining countervailing power will be the alternatives that face the airlines. If airlines using the airport are involved in strong competition then it is unlikely that any individual airline could exert countervailing power. Conversely, if there are, say, two airlines that only compete for marginal customers, there is a high degree of customer lock-in with each airline, and the relevant airport is not significant in terms of either total airline profitability or airline network configuration, then it is likely that each airline could have significant countervailing power. Each airline has a credible threat to stop using the airport. This 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.

The existence of a single significant buyer does not automatically create countervailing power. For example, consider an airport that services an isolated mining town. If only one company operates the mine and is the main customer for flights using the airport, then it might appear that the mining company will have significant countervailing power. This need not be the case. Any threat by the company to stop using the airport might not be credible, particularly if it leads to a significant deterioration in worker morale or profits. It is quite possible that the airport owner has significant market power, particularly if it faces no cash constraints or other restrictions that would prevent it absorbing any short-term losses created by a 'buyer strike'.

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 the 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.

#### **1.4 A framework for determining market power for airports and airport services.**

The discussion on market definition and market power given above can be used to create a framework to consider these issues for airports. Such a framework involves the following steps.

**Define the problem:** As a first step, it is necessary to define the exact problem to be analysed. Market definition is purposive and unless there is well-defined question, it is not possible to formulate an appropriate view on market power. For example, the question of whether an airport has market power in general over aviation is very different to the question of whether an airport has abused market power by imposing a refueling levy.

**Determine the potential market participants:** it is necessary to consider exactly what parties might be in the relevant market. At this initial stage, the group of potential participants needs to be kept as broad as possible. Groups can then be excluded at a later stage of the analysis if, on further examination, they are found not to be in the relevant market. It is also important to consider parties that could provide a constraint on the firm's behaviour even though they might not be active in the market at present. To carry out this 'participant' analysis, the relevant functions of the airport need to be specified. For example, are the relevant functions just related to the transport and storage of fuel, as might be the case when considering a refueling levy, or are they broader aviation services. It is also necessary at this stage to consider whether there are any particular subgroups of participants that need to be kept in mind, whether the relevant service is best viewed as a bundle of services, and whether there are potentially multiple products that are supplied by a common input controlled by the airport. In other words, it is necessary to consider submarkets, cluster markets and multiple markets.

**Determine the potential time frame(s) and functional levels for analysis:** The approach to geographic and product market will be inextricably linked to the time period for analysis and the functional levels being considered. As a result, it is necessary to form a preliminary view about these market features.

**Consider the substitution possibilities on both the demand and the supply sides:** For

the relevant time periods and the relevant functional levels, what constraints operate to moderate the airports behaviour. At this stage, it is necessary to bring formal technical analysis to bear if data is available. Market inquiries will also be a key factor, as will consideration of the behaviour of the airport in question and of other airports. On the supply side, who other than the relevant airport can provide the relevant service? Is the service able to be supplied ‘off site’ or at another airport? It is important to consider alternative functional levels. Would a rise in the price of the service lead to substitution from other airports for the whole aeronautical service? Is the ‘bottleneck’ the provision of access to airport facilities rather than the provision of the service, so that the relevant functional level for market power analysis lies upstream of the service? On the demand side, is the service one that is necessary for a purchaser of airport services so that demand for the service will be very (own price) inelastic, or is the service discretionary? Are there alternative products that can readily substitute for the service? Again, the functional level must be considered. For example, will a rise in the price of the service lead to a switching between modes of transport?

At this stage of the analysis it is important to bring the consideration of submarkets, cluster markets and multiple markets to bear. The analysis should confirm or refute whether there is a simple market or whether one of these three alternatives is a more appropriate way to analyse market power.

The analysis should not rely on one form of analysis but needs to be robust to alternative forms of analysis. Even if there appears to be a relatively low degree of substitutability for the service, it is desirable to check this, for example, by using the hypothetical SSNIP test.<sup>15</sup>

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<sup>15</sup> An informal example of how the SSNIP test can be used is provided by the ACCC’s “Fuel throughputs levies: report pursuant to the Commission’s monitoring functions under the Prices Surveillance Act 1983”, December 1998. At page 5 and page 23 of that report, the Commission noted that the increased refueling lease charges at Brisbane and Perth airports would lead to a rise in revenues of 300% and 200% respectively. Clearly, such increases in revenues involve more than a 10% increase in prices and it would

**Re-examine the underlying assumptions:** The analysis of the geographic and product market relied on assumptions about the temporal and functional nature of the market. It is necessary to re-examine these assumptions and to see if they remain appropriate. It may take a number of repetitions to converge on an appropriate approach to market definition. It is also necessary to check the underlying assumptions of the technical analysis. When considering substitution possibilities, were prices based on a competitive standard rather than a standard that already included an abuse of market power? Were the relevant cross-price elasticities of demand driven by the behaviour of a few large consumers and, if so, is it useful to focus on the submarket of small consumers? It needs to be kept in mind that market analysis is a tool to help investigation, not the aim of the investigation. It may not be desirable to try and tie behaviour into one specific definition of the market. Rather, keeping alternative definitions in mind may be more useful, so long as these alternatives are reasonably closely related.

**Examine the airport's market power:** Implicitly, the determination of market definition has already provided significant input into the examination of market power. This stage, however, provides a final check of the analysis. In particular, the means by which the airport is supposed to abuse its market power needs to be considered. Is this form of abuse realistic or credible? Is there countervailing power that makes the abuse unlikely? Are there alternative factors that have not been considered for market definition that would impinge on market power? For example, for some types of goods, second-hand markets provide a constraint on the market power of a new-goods producer. Such alternatives can easily be missed when considering market definition, but can be captured at this step when analyzing abuse of market power.

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appear that the rises were sustainable. Thus, the data suggests that there is a 'market for refueling services' as concluded by the Commission, or a related market (e.g. market for airport refueling sites) in the Perth region and in the Brisbane region.



A key part of the framework is the gathering of relevant data. It is unlikely that such data will simply be available to an analyst. Rather, the analyst will need to gather the data from market participants and other sources.

## **2. Market power and airports.**

We begin by applying the framework developed in section 1.4 to the issue of market power at the level of an entire airport. The 22 leased airports cover a range of sizes and services. They include large international and domestic airports, such as Melbourne and Brisbane, as well as smaller secondary airports, such as Essendon and Bankstown. The twelve airports that are subject to prices regulation also differ significantly. Melbourne and Brisbane are subject to prices regulation as are the smaller airports of Launceston and Coolangatta.

In this section of the report, we provide a preliminary analysis of the market power of some of these leased airports. This study is not meant to be definitive but rather represents a ‘first pass’ in order to highlight the key issues.

The first step for analysis is the identification of the underlying question. Here, it is whether or not specific airports have market power over general aviation. In other words, given the aviation services provided by specific airports, do some or all of these airports have the ability raise prices to a supra-competitive level over a relevant time frame?

In order to carry out this analysis we need to identify relevant potential participants in the market. On the supply side, airports provide services that are used in the transportation of both people and freight. If we consider a specific airport (for example, Melbourne) then the potential supply side participants include other airports (Essendon and Moorabin), and other firms that supply infrastructure used in transportation of people and freight. This includes rail and road. On the demand side, the direct customers of the airports are the domestic and international airlines. These firms are not, however, the end users of the airport services. Rather, the airlines use the airport services as an input into the provision of a variety of transport services. As any abuse of market power by the airports will be reflected in the retail prices charged by airlines, it will be important to identify the airlines customers. This will aid us when considering competition at different functional

levels. Airline customers tend to fall into a number of well-defined separate groups. First, there are customers for passenger transport including domestic passengers and international passengers. There are different classes of passenger – for example tourist travelers or holidaymakers, and those traveling for business. Second, there are customers for freight services. Some of these customers will have access to alternative products that are reasonably close substitutes for air services. For example, for many domestic freight customers, ground transportation might offer a reasonable alternative to air transport. Other customers, such as international business travelers, might have few if any alternatives to air transport and might be very price inelastic.

The airports clearly provide a variety of specific services. However, if we are considering the market power of an airport as a whole it is most useful to consider the bundle of services supplied by an airport.<sup>16</sup> We consider the individual services in more detail below.

Not all airlines use all of the services supplied by airports. For example, passenger-handling services are irrelevant for freight. Duty free shopping is only relevant for international passengers. Further, there does not appear to be any reason why an unregulated airport could not charge different prices for different types of aeronautical services. In other words, price discrimination by the airport seems to be feasible. As a result, it might be useful to think of an airport as supplying a number of bundles of aeronautical services that are used as inputs for different types of air services.

The categorization of market participants suggests that, as a reasonable first pass, the relevant classes of products provided by airports can be broken into domestic passenger services, international passenger services, domestic freight services and international freight services.

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<sup>16</sup> See Sydney International Airport (2000), Australian Competition Tribunal, 1 March at para 81. “[A]irports typically provide a bundle (sometimes called a cluster) of services, utilizing a different variety and mix of assets ... . Subsets of the bundled services may be considered as falling into separate functional markets, perhaps requiring only a subset of the airport facilities”.

The next step in the analysis is to consider the relevant time-frame for analyzing an abuse of market power. An airport that raises its prices today will be able to make at least transitory rents. In other words, airports (along with almost every other firm in the economy) have some market power. The real issue is whether or not an airport can exploit any market power over a reasonable period of time. In other words, is the market power substantial or, at least, non-trivial. When dealing with a major infrastructure facility, a period of time shorter than one year is almost certainly too short for analysis. Infrastructure industries like airports often involve large capital investments, substantial sunk costs and long lived assets. New entry into such infrastructure industries often takes considerable time and planning. Even if the source of competition were an expansion in supply from an alternative infrastructure facility, such competition might involve an expansion in capacity at the competitive facility. This also is unlikely to occur within one year. If a time frame of less than one year were considered then almost all owners of major infrastructure would be viewed as having significant market power.

This said, the time frame for analysis cannot be too long. A firm that is able to maintain significant monopoly rents for, say, more than five to ten years, before competition eliminates those rents, is able to inflict substantial damage on the economy. The misallocation of resources associated with monopoly pricing means that an extended period of high prices is socially costly.

An appropriate time frame for analysis of airport market power most likely is within one to five years.<sup>17</sup> Such time periods should provide guidance and should not be interpreted strictly. For example, if an airport could sustain monopoly pricing for slightly more than a year, but no longer, then it is probably reasonable to conclude that it only has a degree of market power that does not warrant intervention. Given the costs of such intervention, through for example price regulation, it is likely that intervention will be more economically costly than the excessive pricing that it is meant to stop.

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<sup>17</sup> The relevant time frame might also depend on whether long term infrastructure duplication is likely or socially desirable.

To complete the third step in the framework, it is important to define the relevant functional level of the airport's operations. As already noted, the airport provides upstream inputs that are used by airlines to provide a variety of aeronautical services. The relevant functional stage is an upstream level, perhaps tentatively defined as ground-based services for airlines.

The fourth step in the market power analysis involves the determination of the relevant geographic and product markets. This requires the consideration of substitution possibilities on both the demand and the supply sides. This step usually requires significant quantitative input based on market analysis. As I do not have access to such information, my analysis here will necessarily be speculative and preliminary.

From the second step of our analysis, it is sensible to begin by separating out four different classes of aeronautical service that uses airport provided ground-based services as an input. These are international and domestic passenger transport and international and domestic freight transport. Before proceeding, we need to check that these are, in fact, separate products that are in separate retail markets. In other words, is there either significant supply or demand side substitution at the retail level that means that some of these products are really in the same market? This is important as it effects the ability of the airport to use any market power it might possess to discriminate between providers of these different retail services.

I do not have sufficient information to confirm that these four retail categories are best considered as involving different retail markets. There is likely to be limited demand side substitution between the different products, although this is likely to depend on the specific types of passengers. For example, an international tourist passenger domicile in Australia might be able to readily switch to a domestic holiday destination. However, an international business traveler may not have similar options. Similarly, supply side substitution might be possible. For example, it might be possible in a reasonable period of time to refit a standard plane to carry more freight and fewer passengers or vice-versa. While larger planes tend to be used on international routes compared to domestic routes, some smaller planes are also used on international routes.

This said, it is important to keep in mind the purpose of the analysis, which is to determine market power in an upstream production stage. To the degree that the same airport provides similar services for airlines providing all of these services, substitution between different aeronautical services might have little bearing on market power. In this sense, taking the division of the four services too strictly might lead to an erroneous conclusion that the airport lacks market power. For example, it could be claimed that if the airport raised international landing charges then this would lead to airlines and passengers switching to domestic flights. This suggests that the airport lacks market power in the provision of ground-based services to international passenger services. Of course, this conclusion is false if the domestic passenger services rely on similar ground based services provided by the same airport, as the airport could raise the price of these services at the same time as it raises the price for international services.

There might be different degrees of retail competition that impinge on the airport's upstream market power. For example, if raising both international and domestic landing charges led to little response by international passengers but significant intermodal substitution (eg. to road or rail) by domestic passengers, the airport might lack market power in the domestic market but have such power in the international market. As a result, it is convenient to maintain the separation of services into four categories.

To further the analysis, it is probably useful to focus on two specific airports. These will be Melbourne and Coolangatta. Melbourne airport is the only airport in the Melbourne region that is able to take large jet aircraft. It is the only airport that has international passenger handling facilities. There are alternative airports in the Melbourne area that can accommodate smaller aircraft. Melbourne is a significant distance from any alternative major airport.

In contrast, Coolangatta is a regional airport in the Gold Coast area of Queensland, approximately two hours drive south of Brisbane. The Coolangatta airport only supplies domestic transport services. There is a major international and domestic airport in Brisbane. This airport is easily accessible by car from Coolangatta and the Gold Coast region. In fact, the Brisbane airport lies just off the main motorway between the Gold Coast and Brisbane.

We consider each of our four categories of service in turn. First consider international passenger services, and begin by considering the product dimension of the market. International passenger services are of little relevance for Coolangatta. For Melbourne airport, there is likely to be little intermodal competition at the retail level that would constrain the market power of Melbourne airport. There is also likely to be relatively little substitution in supply or demand for the relevant ground-based airline services. International airlines often use large planes and they require ground services (such as landing facilities, refueling, food services, cleaning, passenger and baggage handling, minor maintenance) at an airport. It is unlikely that any producer who is not an airport operator would be able to supply the relevant bundle of services. On the demand side, there is clearly no alternative for an international airline operating into Australia than to purchase the relevant ground-based services from an airport. In this sense, the relevant product description would appear to be “ground based services for aircraft operating international passenger services”.

For the geographic dimension of the market, there might be inter-airport competition for international airline services. In particular, Melbourne airport might be in competition with other airports, such as Sydney, Brisbane and Adelaide, to provide services for international airlines. If this competition is reasonably intense, then the relevant geographic market for ground-based services to international airlines might include Brisbane, Sydney and Adelaide as well as Melbourne.

I do not have information on the intensity of inter-airport competition. Factors such as capacity constraints in airports, costs of passengers moving domestically between airports, and proximity to desired locations would be relevant. For example, if most international passengers who wish to come to Melbourne would find it extremely inconvenient to transit through Sydney, then competition from Sydney airport might be only a weak constraint on Melbourne airport. Conversely, if most international passengers wish to go to Sydney and Brisbane, then Melbourne airport might be at a significant disadvantage in attracting international airlines and it might face extremely elastic demand for the international passenger services that it provides.

To determine the relevant extent of the geographic market for ground based services for aircraft operating international passenger services, it is necessary to undertake further analysis. Clearly any decision about market power for Melbourne airport would depend on the outcome of such analysis.

Domestic passenger services are relevant for both Coolangatta and Melbourne. There is a greater possibility for retail-level intermodal substitution for domestic passengers. The degree of such substitution is an empirical matter, but is likely to depend on the mix of passengers (eg. business passengers might have fewer intermodal options than holidaymakers). As a first pass, it is unlikely that ground-based transport would be a reasonable competitive alternative for many passengers, remembering that such competitive alternatives need to be evaluated at a competitive airport price to avoid the ‘cellophane fallacy’.

For the same reasons as above, there is likely to be little demand or supply side substitution from non-airports at the relevant functional level. As a result, the relevant product is probably best defined as “ground based services for aircraft operating domestic passenger services”. If, however, there was a reasonable degree of intermodal substitution, it might be better to consider a market for domestic passenger transportation.

The geographic extent of the market is likely to be narrower than for international passenger services. While some holidaymakers might find different Australian cities to be reasonable substitute destinations, many domestic passengers would not find this to be the case. For example, if a firm has offices in Melbourne then it is difficult for a meeting to be arranged that does not involve some meeting participants flying in or out of Melbourne. It seems likely that the geographic extent of the market is limited to a region around the airport.<sup>18</sup> As such, it is unlikely that Sydney airport is in the same geographic market as either Coolangatta or Melbourne for domestic passenger services. However, it could be argued that Brisbane airport is within the same geographic market as Coolangatta. Tentatively we could define the relevant markets as the Melbourne regional market for ground based services for aircraft operating domestic passenger services, and

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The exact size of the area will depend on ground-based transportation facilities.

the South East Queensland market for ground based services for aircraft operating domestic passenger services.

Retail-level intermodal competition is more relevant for international and domestic freight services. Air-transport offers greater speed over long distances, so that there is less likely to be intermodal substitution in the international freight market. Testing the degree of intermodal substitution is beyond the scope of this report.

If we consider demand and supply side substitution at the upstream functional level, there again seems little alternative to ground based airport services. This said, the geographic extent of the market is likely to be at least as wide as the market for relevant passenger services. In particular, it is likely to be easier and more cost efficient to mix air and ground transportation for freight than it is for passenger services. Again, this is an empirical matter beyond the scope of this report.

The final stage of the process is the determination of market power. There are a number of empirical issues that would need to be resolved for freight transport and, as a result, I will concentrate on passenger services. This said, it is likely that if an airport does not have significant market power in the markets for the provision of ground based services for aircraft operating either international or domestic passenger services, then it seems unlikely that it will have substantial market power in the equivalent freight markets.

For international passenger services, market power for Melbourne airport rests on the geographic scope of the market. If the market includes significant other international airports such as Brisbane, Sydney and Adelaide, then any market power of Melbourne airport will be moderated. However, the extent of its market power will depend on the degree of competition between these airports.

For domestic passenger services, Melbourne airport is likely to have substantial market power unless there are alternative airports in the Melbourne region that can enter the market for the relevant ground based services in, say, a three to five year period. There are alternative airports in Melbourne, but these airports do not currently accommodate aircraft used on standard inter-capital domestic services. If there are substantial barriers to these airports expanding and offering these services (eg. noise constraints at Essendon), then Melbourne Airport will have significant market power.



As noted in section 1.4, countervailing power from the airlines might be able to at least partially offset Melbourne airport's market power. There are two main domestic carriers currently operating out of Melbourne airport as well as two smaller carriers. One of the major carriers, for example Qantas, might be thought to have significant countervailing power. However, because of its location in the second largest Australian city, it is not clear that even a major airline, such as Qantas, can credibly exercise countervailing power to Melbourne airport. It is likely that Qantas could not threaten to cease services to Melbourne or even to substantially curtail these services. If Qantas were to carry out such a threat, then this would undermine its own profitability and probably lead to significant gains to Qantas' rival carriers. While this issue requires further investigation, at first pass it is not obvious that there exists countervailing power that would offset any market power for Melbourne airport.

In contrast, Coolangatta airport is far less likely to have significant market power. Brisbane airport provides a relatively easy substitute for Coolangatta for domestic passengers. It is likely that Coolangatta airport would not have significant market power in a South East Queensland market for ground based services for aircraft operating domestic passenger services.

Even if investigations showed that Brisbane airport did not provide a reasonable alternative to Coolangatta for domestic passengers, the major carriers are likely to be in a position to exert considerable countervailing power over Coolangatta airport. This airport is not a key Australian airport and it seems likely that the major carriers could cease operating into and out of Coolangatta at only a minimal cost in terms of foregone profits. As a result, any attempt by Coolangatta to abuse its market power might prove fruitless.

The conclusions provided in this section are tentative and preliminary. More work would need to be carried out to confirm or refute these conclusions. However, the aim of this section has been to illustrate how the framework developed in section 1.4 can be applied to airport services as a whole. In the next section, we apply the framework to some individual airport services.

### **3. Market power and specific airport services**

An airport might have significant market power in, say, a Melbourne regional market for ground based services for aircraft operating domestic passenger services, but not have substantial market power for one specific service. While these services are often bundled and supplied to airlines, the source of an airport's market power for the bundle might be one or more specific services. For example, the supply of flight catering facilities might be competitive while there might be very little competition in the provision of airside facilities such as runways. In such circumstances, the source of the market power in the market for ground based services for aircraft operating domestic passenger services, is the lack of competition for airside facilities.

An airport can abuse its market power, for example, in a market for ground based services for aircraft operating domestic passenger services if it has such power, regardless of the specific service or services that are the source of that power. This said, it can be useful to delineate exactly where the market power is sourced and which of the bundle of services are (potentially) competitive. The regulator, for example, might wish to avoid regulating potentially competitive services by using a 'dual till' approach to airport regulation. In this section, I use the framework developed in section 1.4 to examine this issue.

There are a large number of services that are supplied by Australian airports. These include airside facilities (eg. runways), passenger handling areas, ground handling facilities, refueling facilities and office and retail facilities. A number of these facilities have been considered informally by the ACCC in its October 1998 *Draft Guide: Section 192 of the Airports Act – Declaration of airport services*.

We will consider three of these services provided by Melbourne airport. For the purpose of this report we will consider these services only in relation to passenger-based aeronautical services and, consistent with section 3, we will assume that Melbourne airport has significant market power in the Melbourne regional market for ground based services for aircraft operating domestic passenger services. We will also assume that

Melbourne airport might have market power in the relevant geographic market for ground based services for aircraft operating international passenger services.<sup>19</sup>

The assumption that Melbourne airport has market power in the broader markets means that it must have market power in some of the services it supplies. In other words, if Melbourne airport has market power over a bundle of services, it must have market power over at least some of the component services in the bundle. If not, then an airline could usurp Melbourne airport by buying the elements of the bundle from competitive suppliers and assembling the bundle for itself. The obvious services where Melbourne airport has market power given the assumption of market power in the broader market, are airside facilities.

The opposite, however, need not hold. In other words, an airport like Coolangatta might have no significant market power in a broad aeronautical services market, but still have market power in relation to a particular service. This is most likely to be the case where the service makes up a relatively small part of the bundle of services sold by the airport and is only a relatively small part of airline's costs. In such a situation, a significant rise in the price of the specific service (eg. to twice its competitive price) might have a relatively small effect on total airline costs and not lead to significant substitution by an airline.

In this section, we will consider three examples of these services – passenger handling areas, commercial and retail facilities, and landside passenger vehicle access. Again, when approaching market definition, the purpose of the analysis needs to be kept in mind.

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<sup>19</sup> There is no conceptual problem in considering both broader and narrower product markets. As noted in section 1, market definition is purposive and the relevant market depends on the question being asked. For example, in Sydney International Airport (March 1, 2000) the Australian Competition Tribunal at paragraph 99 determined that, for the purpose of the issue being analysed, “the relevant market landscape has the following main features: a cluster market for international airport services in the Sydney region: [and] a series of separate, functionally differentiated, markets for services required by international passenger and dedicated freight aircraft carrying freight flying into, and out of, SIA; ...”.

In particular, here we are attempting to determine whether or not an airport has significant market power in the provision of one type of service.<sup>20</sup>

First consider passenger handling areas. We need to determine the potential market participants. The direct purchasers of these services are the airlines. Some of these services are directly consumed by the airlines. For example, the international airlines provide personnel at check in areas and use the equipment supplied by the airport to process passengers. In some situations, the airlines might buy space from the airport and provide their own facilities. Passengers directly consume other services. For example, passengers might wait in (common) gate lounges in an area provided by the airport.

Many, but not all, of the passenger handling areas need to be provided at the airport. Some services, such as check-in, could be carried out at a remote location or even directly outside the airport buildings. Some substitution can also occur through innovative ticketing. The use of electronic tickets has meant that some passengers no longer need to use the traditional check-in facilities. However, it is difficult to imagine significant participation by parties other than the airlines in the provision of these services.

The second step of the analysis involves the preliminary determination of the temporal and functional aspects of the market. Passenger handling areas may involve a significant investment, such as the construction of a new terminal building. However, these services can also be supplied in temporary facilities, albeit with reduced amenity. For example, mobile stairs can replace ‘airgates’ at least in the short-term. Further, airlines can often share facilities, most notably the international airlines. This suggests that the relevant temporal dimension of the market should be shorter than for a general aviation market. For example a period of one or two years may be relevant.

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<sup>20</sup> It is arguable as to whether a regulator or competition authority should care about such market power. If the service is only a small fraction of costs and airlines care about the entire bundle of costs, then it can be argued that the observed market power for a service is essentially irrelevant and reflects a focus on a too narrow product dimension of the market. Again, the issue comes back to the question that the authorities wish to address.

Passenger handling services are an input into the provision of aeronautical services. As such, they involve a functional stage upstream from the retail level. More importantly, the areas where these services can be provided rather than the services themselves would appear to be the most likely location of any airport market power. Remembering that the purpose of the analysis is to locate such market power, if it exists, the relevant functional level should be the supply of areas and space that can be used by airlines or the airport to provide passenger handling services.

Some of the potential substitutes for passenger handling are suggested above. I do not have sufficient information to determine how reasonable such alternatives are likely to be in practice. However, some passenger services, such as those associated with loading and unloading a plane, cannot reasonably be carried out except at the airport. Further, to the degree that the airport has market power in the relevant general aeronautical market, airlines do not have reasonable inter-airport substitutes to these services.

This suggests, for example, that with regards to Melbourne airport, there is a Melbourne regional market for passenger handling areas for aircraft operating domestic or international passenger services.

The final step is to consider market power. Countervailing power is an issue that needs to be considered here. However, given our assumptions that Melbourne airport has significant market power in the relevant aeronautical services markets, it is likely that the airport also has significant market power in the regional market for passenger handling areas for aircraft operating domestic or international passenger services.

The second service to consider is commercial and retail facilities. The core issue is whether Melbourne airport has significant market power in the provision of these services. Again, the analysis will only be preliminary and a full analysis would require significantly more data.<sup>21</sup>

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<sup>21</sup> For example, representatives from Melbourne airport have claimed that empirical evidence on prices show that retail prices of most merchandise at the airport do not exceed the price at non-airport locations. If this was empirically verified, then it would suggest that there is not an abuse of market

The relevant participants are the passengers and associated individuals, who directly purchase products at the retail level, the retailers who operate the outlets, and potentially any off-airport retailers who might provide competition for the airport retail outlets. On the supply-side, other providers of ‘shopping center services’ could also be relevant for market analysis. For example, there is a new hotel facility being built at Melbourne airport. I am not aware of the ownership of this facility or of any restrictions on its use, but if part of that facility could be used to provide retail or commercial premises, then it might act as a competitive constraint. Similarly, facilities could be built outside the airport perimeter and existing off-airport shopping centers might provide a competitive constraint.

Provisionally, the functional level is the wholesale supply of space and associated amenities for retail and commercial outlets. In this sense, the airport owners are like the owners of a shopping center.

The temporal dimension can be important. Some customers might have little choice but to purchase products at retail outlets at the airport. For example, a person whose flight is delayed and who, for medical reasons, must have regular meals, might be constrained to purchase a meal at a retail outlet in the airport. However, such situations would seem to be rare. If a flight is significantly delayed, then a customer could potentially go ‘off site’ to purchase a meal. For example, I believe that there is a shopping center less than five minutes drive from the airport, and there is a retail outlet that provides some food as well as petrol on the edge of the airport. If a significant delay is known in advance, then customers can bring food or beverages into the airport. Further, many outlets at the airport involve discretionary shopping. While it might be more convenient, for example, to purchase a novel at the airport, such a purchase would still seem discretionary with potential customers having a variety of other options.

This suggests that the relevant temporal dimension should not be too short. Any market power by the airport would need to be reflected in a long-term mark-up of prices above a

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power at an upstream functional level by Melbourne airport, as such an abuse would be reflected in retail prices.

competitive level. For example, a period of, say six months to one year might be reasonable.

Some of the potential constraints on the exercise of wholesale market power by the airport are discussed above. It is reasonable to assume that the supply of occupants for commercial and retail premises is reasonably competitive. While some retailers, such as McDonalds, might have market power in their own right, it is not obvious that such power is relevant for most retailers that operate at Melbourne airport. As a result, if the airport had market power at the wholesale level, we would expect this to be reflected in the prices paid by customers, rather than, for example, being absorbed by the lessees of the retail and commercial premises.

The empirical tests discussed in section 1.4 can be of use here. For example, are retail prices at the airport generally in line with retail prices in other locations? If not, do the prices still tend to move together, suggesting that off-airport locations constrain retail prices at the airport? Are prices already inflated reflecting the potential to misjudge a competitive benchmark? This latter question requires information about the opportunity cost of space at the airport. If prices are not already inflated, could they be inflated and be maintained at an inflated level for a reasonable period of time, such as six months to one year?

Clearly I do not have the information required to fully answer these questions. From introspection, I suspect that the relevant market is likely to be the Melbourne regional market for the supply of commercial and retail premises. For such a market, Melbourne airport clearly lacks market power.

As noted in section 1.4, it is necessary to check the assumptions that drive the analysis. For example, are there significant sub-markets where the airport might have significant market power? One possibility is duty-free outlets, although off-airport outlets are also common. The airport has an advantage in that it offers the last chance to buy such items before an international passenger re-enters the country. Again, to analyse this submarket, we need to consider the potential participants. On the demand side, these are international passengers. On the supply-side, the potential participants are any other suppliers of duty-free outlets. These include the airlines themselves, who offer inflight duty-free products

and the duty-free outlets at overseas airports.<sup>22</sup> Further, off-airport duty free stores are also an alternative, particularly for items such as cameras that a tourist is likely to use while overseas. Finally, non-duty free retailers are also a competitive constraint. A duty of, say, 10% provides a ‘buffer’ to duty-free outlets but only a limited buffer. Clearly, as soon as they raise prices more than 10% above costs, then they face competition from standard retail outlets. While I will not carry out a full analysis of the duty-free submarket here, it is not obvious that Melbourne airport would have significant market power over this submarket.

The third service considered here is landside passenger vehicle access. Again, the relevant issue is whether Melbourne airport has significant market power in relation to such access.

On the demand side, relevant participants are the passengers and associated individuals as well as any persons who commercially transport passengers into the airport or out of the airport grounds. For example, taxis, buses (including shuttle buses), private cars and commercial cars (such as hire cars, rental cars, business fleet cars) are all used to either deliver passengers to Melbourne airport or collect passengers from Melbourne airport. Non-motorised transport could also theoretically be used to transport passengers into or from the airport grounds and, in the future, rail transport might also be relevant.

On the supply side, the only relevant potential supplier would appear to be Melbourne Airport. It is difficult to imagine how any off-airport provider could provide landside vehicle access. Such access, by definition, involves transport to or from relevant airport buildings. We have assumed that Melbourne airport has market power in the relevant broad passenger-based aeronautical markets, which means that we have assumed that vehicle access to other airports is not a viable alternative for delivery to Melbourne airport buildings. In other words, given our assumption of broad market power, delivery of a passenger to, say, Essendon airport will not be a reasonable substitute for delivery of that same passenger to Melbourne airport, because Essendon airport does not provide a

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<sup>22</sup> For example, when traveling, say from Mumbai to Melbourne via Singapore, the duty-free outlets at Mumbai and Singapore compete with the outlets at Melbourne.



reasonable viable alternative for most passengers to airline services to and from Melbourne airport. By definition, it is physically impossible to have an off-site provider of landside passenger access. While facilities such as car parks can be built off-site, passengers using those facilities still require landside access to or from Melbourne airport.

Landside passenger access is an input into the provision of aeronautical services. Such access is necessary for almost any passenger flying into or out of Melbourne airport. While it is theoretically possible for a passenger, say, from Hobart, to not need to leave Melbourne airport, I will assume that such passengers are uncommon. Further, even if the passenger did not need to leave the airport, due to say a business meeting being organized within the airport grounds, any other individuals who need to directly interact with the passenger would need landside access. Provisionally, the functional level is the upstream supply of landside access to passengers flying into or flying out of Melbourne airport.

While landside passenger access involves a wholesale transaction, any charges for such access might be directly paid by the passenger, or indirectly paid through a bus or taxi fare, a car-parking fee or even incorporated into the price of an airline ticket.<sup>23</sup> Associated people who are involved in transporting a passenger to or from the airport, such as friends or relatives who are ‘seeing off’ a passenger, might also pay the fee.

At a minimum, landside passenger vehicle access involves the construction of roads and areas to pick-up or set-down passengers. If public transport is available, access might also involve the construction of an airport station and associated public transport infrastructure. It is difficult to envisage any airport, even one dedicated to freight, being able to operate without some vehicle access. In this sense, the additional investments required for minimal landside passenger vehicle access in addition to the facilities necessary for the functioning of the airport, are relatively small. Further, as noted above,

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<sup>23</sup> The departure tax imposed on international passengers in many countries provides an example of these alternatives. This tax is sometimes paid directly by the passenger at the departing airport while other times it is collected by a travel agent and subsumed in the ticket price. Similarly, if an airport imposed a per-passenger land-side access fee then this could be paid by the passenger at the airport or subsumed into the airline ticket price.

off-site provision of such access is not feasible so that construction of such potentially competitive facilities is not relevant to the temporal analysis of the market. This suggests that the temporal dimension of the market should be relatively short – under one year and potentially less than six months.

There do not appear to be many, if any, relevant demand-side or supply-side substitutes for landside passenger vehicle access. While passengers to arrive at or to leave from Melbourne airport might use many different forms of transport, landside access is needed for all of these transport modes. For example, demand-side substitution from a private car to a taxi does not alter the need for passenger access. The only relevant demand-side substitute for landside passenger vehicle access would appear to be walking. This is unlikely to be a relevant alternative for almost all passengers. Similarly, as noted above, there appear to be no supply-side substitutes to access to Melbourne airport, given our assumptions about market power in broader passenger aeronautical services.

This discussion suggests that there is a (wholesale) market for passenger vehicle access at Melbourne airport.

The final step of the analysis is consideration of market power. On the basis of our provisional analysis, Melbourne airport clearly has market power in the relevant market. This market power is closely related to market power in the relevant broad passenger based markets discussed in section 3.1.

## **4. Summary and conclusion**

In this report, we have presented an approach to assessing market power for airports. The approach builds on standard legal and economic practice in Australia. It involves six key steps:

- Defining the explicit problem that is to be addressed.
- Determining the potential market participants.
- Determining the potential time frame(s) and functional levels for analysis.
- Analysing the substitution possibilities on both the demand side and the supply side of the potential markets.

- Re-examining underlying assumptions and iterating to a reasonable market definition in order to address the problem at hand.
- Examining the airport's market power.

This approach concentrates on market definition rather than concentrating directly on market power. There are three reasons for this. First, the determination of market power and the determination of the relevant markets are entwined. By analyzing the relevant market, much of the information and analysis for market power will be carried out automatically. Second, focusing on the market rather than the market power provides a series of well-formulated techniques that can be brought to bear on the problem. Many of these techniques such as the SSNIP test or measurements of cross-price elasticities require the collection of market information. Others, such as the cellophane fallacy, provide guidance to the analytical task. In this sense, market definition is a necessary precursor to the analysis of market power and provides a framework for thinking about market power. Third, focusing initially on the market rather than on market power avoids the temptation to pre-judge a firm's behaviour. The determination of market definition helps the analyst to step aside from any pre-conceptions and allows for objective analysis.

The approach presented in this report differs from the approach adopted by the ACCC in its "Draft Guide: Section 192 of the Airports Act – Declaration of airport services", October 1998. The Commission's approach in the Draft Guide involved (a) determining whether the service is necessary or discretionary; (b) considering provision by another airport and (c) considering provision off-airport. Clearly these three steps are part of the process of market definition. In particular, they all really ask if there are any relevant substitutes. Part (a) deals with demand-side substitution (i.e. could the airlines avoid using the service) while (b) and (c) deal with supply-side substitution. The Commission's approach however may 'miss' some substitution possibilities and does not provide for the sort of formal analysis usually needed for market definition. As such, the approach presented in this paper is an extension of the Commission's approach and brings the approach more into line with standard economic practice.

The approach presented in section 1.4 was tentatively used to consider both market power of specific airports and market power of specific airport services. The analysis in sections

2 and 3 was preliminary. In some cases it was impossible to draw a conclusion without further analysis. In other cases, a conclusion could be drawn, subject to further verification. No attempt was made to consider all potential airport services. Such an exercise would involve considerable discussion with the airlines, the airports and other market participants.