However, what is important in assessing the Alliance is that the issue of feeder traffic is unlikely to weigh heavily on entry or expansion decisions for a VBA, which, as discussed in section 2.3.5, is the most likely form of entry. A strategy of VBAs is to avoid the complications, slower turnaround times and hence resulting higher costs associated with interlining. When account is taken of these costs, it is not apparent that on net, interlining is a material net advantage to FSAs.

Rather, at least to date, the success of VBAs internationally in avoiding reliance on feeder traffic – effectively leaving those customers that need to interline to fend for themselves – has been a factor allowing them to retain a substantial cost advantage relative to their full service rivals. By the same token, the ability to interline that FSAs provide to customers is a component of the public benefit associated with retaining the viability of the full service model.

2.3.4   Vertical relationships

As noted in section 2.2.1, it may be relevant to consider the markets in which computerised information and reservation services, engineering and maintenance services, and ground handling services are provided. These are markets that both the ACCC and NZCC have previously considered in analysing airline alliances and mergers.

Each of these markets is relevant in considering the potential for foreclosure to air passenger service markets. They may be foreclosed if airlines are unable to access inputs from upstream and downstream service providers on terms that would allow an efficient rival to effectively compete with the Alliance, with the effect of thereby deterring or hindering airline entry or expansion in the air passenger services market.

In evaluating the possibility for foreclosure, it is relevant to consider the extent to which vertical relationships exist between incumbent providers of air passenger services and service providers in upstream and downstream input markets. Vertical relationships may arise through vertical integration (i.e. through direct ownership) or through other vertical arrangements, for instance, formal exclusive distribution arrangements or offering of terms and conditions that effectively give rise to exclusive distribution arrangements.

There may well be some competitive concerns arising from vertical relationships. However, we do not believe that any effects arising from vertical relationships are sufficient to foreclose VBA entry into domestic New Zealand and Tasman air passenger service markets, as discussed in section 2.3.5.

Ticket distribution services

Air New Zealand and Qantas both distribute tickets directly through their own call centres and via the Internet, while Qantas Holidays also distributes tickets on behalf of Qantas. The Alliance will not change the number of independent providers that airlines could use as sources of ticket distribution.

It might be argued that airline entry or expansion is currently or would be (as a result of the Alliance) deterred or hindered as a result of airlines discriminating in favour of travel agents (e.g. by use of commission structures, especially commission overrides) that prefer their own services to those of new entrants or expanding airlines, effectively creating an exclusive distribution arrangement. This argument was noted by the NZCC in its Bodas determination.[108]

The use of overrides as a form of inducing loyalty from travel agents is a conduct that could occur if the Alliance were to proceed. However, the ability for this type of conduct to foreclose most relevant routes in question would be unlikely. As noted in section 2.1.4, a substantial fraction of domestic air tickets are sold through airline Internet sites and call centres, especially for airlines operating under a VBA model. As noted in this section, Air New Zealand's move to VBA+ has seen Internet bookings as a percentage of total domestic bookings increase from 4% to 29%. Virgin Blue has an even higher fraction of domestic tickets booked via the Internet. If air tickets are increasingly being booked through airline call centres and Internet sites due the lower costs associated with these more efficient distribution channels (especially under VBA models), then there would seem to be few incentives for incumbent airlines to attempt to foreclose entry into the domestic market using commission overrides, particularly with respect to a potential VBA entrant.

Our views are consistent with those expressed by the NZCC in its Bodas determination, where it noted the ability for a VBA to rely on direct distribution channels.[109] In addition, the NZCC noted that to the extent that an airline in Australia expanding onto Tasman or domestic New Zealand routes was reliant upon travel agents as a ticket distribution channel, it would likely have existing

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[108]   Bodas determination, pp. 51–2.

[109]   Bodas determination, p. 52.

relationships with travel agents that would decrease the scope for market foreclosure.[110] We agree that both these factors serve to limit the scope for the foreclosure of air passenger service markets.

Computerised information and reservation systems

There are two types of computerised information and reservation systems that are relevant:

- CRS (Computerised Reservation Systems) are used by airlines for booking, pricing and ticketing functions, inventory management, and departure control functions. Some airlines host other airlines on their CRS.

- GDS (Global Distribution Systems) are used by travel agents, including many e-agents and encompass booking, pricing and ticketing functions, where ticketing occurs on neutral (not airline specific) ticket stock. Products booked are predominantly air travel, but may also include hotels, cars, and tours.

With respect to GDS, an argument could be made that, on the reservations and distribution systems that it controlled, the Alliance could ensure that its flights were listed more prominently on computer displays used by travel agents to book tickets, thereby placing entrants at a competitive disadvantage.[111] For CRS, the argument could be made that the Alliance could have an incentive to refuse new entrant airlines access to the reservations and distribution systems that it controlled, thereby placing entrants at a competitive disadvantage.

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[110]   ibid, p. 52.

[111]   In Australia, concerns over the potential for anticompetitive conduct were reflected in the TPC's 1992 decision to only authorise the acquisition by TIAS (jointly owned by Qantas, Ansett and Air New Zealand) of the companies holding the exclusive Australian distribution rights for the world's two largest CRS (Galileo and Sabre), subject to TIAS and its owners agreeing to be bound by a Computer Reservations Systems Code of Conduct. The Code included the requirement to provide access to travel agents on fair and non-discriminatory terms. While the Code's authorisation expired in 1997, the ACCC notes that the CRS industry continues to comply on a voluntary basis, while the ACCC monitors compliance and addresses complaints from CRS subscribers. See ACCC, 2000, *Infrastructure Industries: Aviation*, May, p. 21, http://www.accc.gov.au/pubs/Publications/Utilities/Aviation/aviation.pdf.

In this instance, there should be no competitive concerns arising from such vertical relationships. While Air New Zealand and Qantas previously held equity stakes in GDS this is no longer the case.[112] There are a number of GDS providers from which airlines can purchase services, including Cendant/Sabre, Galileo, Amadeus, SITA, Navitaire and IBM. With respect to CRS, in November 2002, Qantas commenced using Amadeus for booking and ticketing services. Amadeus provide similar services to 120 other airlines, including many in the Asia Pacific region. Air New Zealand currently operate their own CRS, called Carina – but are expecting to switch to SABRE or Amadeus. Freedom Air, an Air New Zealand subsidiary, use the Open Skies product from Navitaire.

In summary, it seems unlikely that access to CRS or GDS would foreclose entry into air passenger service markets.

Engineering and maintenance services

Both Air New Zealand and Qantas are vertically integrated in the provision of engineering and maintenance services in their respective home countries, and both currently compete in the Australia–New Zealand region in the provision of some types of maintenance. The Alliance would remove competing providers of engineering and maintenance services from which an entering or expanding airline could potentially obtain services. It could be argued that this would foreclose entry or expansion into air passenger services in the Australia–New Zealand region. Alternatively, it could be argued that, even absent the Alliance, access to engineering and maintenance services is a factor that restricts entry or expansion into air passenger services markets.

It is therefore relevant to consider the extent to which entering or expanding airlines could access services other than those provided by the Alliance members within the Australia–New Zealand region, and the ease with which an entering or expanding airline could self-provide or outsource to overseas service providers.

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[112]   GDS distribute their services through National Marketing Companies (NMC) in each geographic territory. Previously, Air New Zealand and Qantas had equity stakes in two NMCs through the travel distribution company TIAS. Specifically, TIAS used to own two NMCs, namely SCDS and Fantasia, which distributed Cendant/Galileo and Sabre GDS, respectively. In 2001, TIAS sold its shares in the two NMCs to their respective GDS owners.

There are two broad types of checks required by airlines. Line maintenance checks refer to the maintenance support surrounding an aircraft's arrival, turnaround, defect rectification and departure from the terminal. The other type of maintenance can broadly be referred to as heavy maintenance.

Air New Zealand Line Maintenance has a substantial share of line maintenance coverage in New Zealand. For heavy maintenance, Air New Zealand undertakes 'C Checks' for Virgin Blue 737s as well as for Qantas 767 and 747s.[113] In Australia, we understand that the former Ansett still operates a full range of engineering and maintenance services, though it is unclear whether this would be an option for an entering or expanding airline in the future. Flight West, which has been relaunched as Alliance, also provides a full range of services, though it is unclear whether they will retain this full capability if they are able to sell their line maintenance arm, Jet Care.

Given that there are few suppliers of maintenance services in the Australia–New Zealand region, it is relevant to consider the extent to which self-provision and outsourcing is a feasible option.

There may be significant start-up costs if a newly entering airline wished to set up engineering and maintenance facilities to provide the full suite of engineering and maintenance services in the Australia–New Zealand region.[114] Having said this, only line maintenance is required for each arrival and departure at the airport itself. Hence, an airline expanding into the Australia–New Zealand region could use existing heavy maintenance facilities at its home base. Alternatively, an airline could outsource these services overseas. (We understand that a new entrant would typically outsource, though might increasingly insource these functions over time.)

While the Alliance might increase concentration in engineering and maintenance services in the Australia-New Zealand region, there would be considerable scope for an expanding airline to outsource many functions to overseas service providers. Hence, it is unlikely that the inability to access engineering and maintenance services would foreclose air passenger services markets.

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[113]   http://www.airnz.com/engineering/statpage.jsp?pid=10016.

[114]   The precise investment requirements would depend heavily on the circumstances surrounding entry, though the broad cost categories would relate to the following: land adjacent to an airport; purchase/construction of suitable hangars, workshops and facilities; appropriate tooling and docking; skilled labour; costs of regulatory compliance; and warehouse costs for spare parts storage.

Ground handling services

Ground handling services include a range of service functions, including aircraft servicing, baggage handling, cargo and freight services, catering services, fuel and oil services, load control services, passenger handling and ramp handling services.

In Australia, Qantas faces competition in many of these services, from Jardine, Menzies and Virgin. In New Zealand, the information we have obtained indicates that at Auckland airport, Menzies and United Services compete in the provision of ground handling services with Air New Zealand.[115] However, at Wellington and Christchurch airports, Air New Zealand is essentially the sole provider of services.[116]

Having said this, entry barriers are likely to be not so great for the majority of ground handling services such that attempts by an airline to foreclose entry or expansion by airlines into domestic main trunk air passenger services in New Zealand through ground handling services would likely be defeated by entry by independent providers or self-provision.

2.3.5   Likelihood, extent and timing of entry

The preceding sections relating to global trends, market definition and expansion barriers inform our view of the characteristics of the most likely type of entrant onto Tasman and/or domestic New Zealand routes, and in turn, whether the type of entry most likely would be profitable.

As discussed above, market revenues are concentrated on a small number of routes for both the Tasman and domestic New Zealand, suggesting that effective entry could occur by serving a relatively small number routes, thereby lowering sunk cost requirements. This also suggests that advantages arising from network size may be limited and that profitable entry into domestic New Zealand could occur by serving a relatively small number of routes. Hence, as an initial consideration, both these factors are likely to make entry and expansion onto these routes an attractive option.

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[115]   See http://www.iata.org/ighc/details.asp?airport=akl.

[116]   See   http://www.iata.org/ighc/details.asp?airport=wlg;   and
http://www.iata.org/ighc/details.asp?airport=chc.

Our analysis demonstrates that entry would most likely be in the form of an existing airline in the Australia–New Zealand market expanding onto Tasman or domestic New Zealand routes. As noted in section 2.1.1, the Open Skies agreement between Australia and New Zealand might tend to suggest that any likely entry into domestic New Zealand routes would come from an operator that met these ownership and control requirements. In this respect, Virgin Blue now qualifies as an SAM airline following Patrick Corporation's acquisition of a 50% share in Virgin Blue.[117]

More specifically, our analysis of the relevant markets strongly suggests that a domestic operator in Australia would be the most likely entrant onto domestic New Zealand and Tasman routes. As noted in section 2.2.3, a key factor in forming our view that there is a single Australia New Zealand market is that both Australian and New Zealand airlines have placed considerable stress on the importance of providing service throughout the area. Consistent with this view, we note that following the collapse of Tasman Pacific, David Huttner, Head of Commercial Operations, Virgin Blue, stated:[118]

> It would be better if we could integrate the whole network as one overall unit and if we could do that by having domestic services in New Zealand and in Australia and services across the Tasman we think we could become even more efficient and if we're more efficient we can offer lower fares to people.

A consideration of sunk costs is also informative in this sense. As noted in section 2.3.2, sunk costs associated with entry on the Tasman would be low for a player already established in the Australian market.

Expansion barriers are especially low for a VBA, since a VBA would unlikely be impeded by any incumbency advantages that a VBA might have associated with brand loyalty and access to feeder traffic. In this sense, a VBA would have the greatest likelihood of successful expansion onto the routes in question. It is also likely that VBA rather than an FSA would be most likely to succeed on these routes due to the differentiated product that it could offer relative to that offered by existing airlines.

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[117]   That said, as noted in this same section, airlines may obtain similar rights if it receives approval from the relevant ministers in both Australia and New Zealand.

[118]   ABC   Online,   2001,   'Virgin   blue   spreads   wings   overseas',   *PM*,   27   April, http://www.abc.net.au/pm/s284449.htm.

As such, an entrant would most likely have operational characteristics similar to those discussed in section 2.1.3, including a single type of aircraft, single cabin, no frills service, limited fare types, and an emphasis on the Internet as a form of ticket distribution. As discussed below, our modelling of entrant profitability captures these operational characteristics typically associated with VBAs by discounting the costs for a VBA relative to an FSA.

The size of the Tasman and domestic New Zealand markets suggests that an entrant would require targeting of all customer types, as discussed in section 2.2.1, which would require entry with reasonably high flight frequencies. The history of successful entry in the Australian and New Zealand domestic markets is consistent with this view. As discussed in section 2.1.3, the most successful recent entrant into Australia and New Zealand has been Virgin Blue, whose strategy has been to target a range of customer types through high flight frequencies.

Indications of likely entry

Our assessment of the likely form of entry is consistent with a number of comments made by airlines over the last year. Virgin Blue, which has successfully established itself in Australia, has made numerous statements indicating that it is highly interested in entering both Tasman and domestic New Zealand routes in the near future.

It is true that, more recently, Virgin Blue has made comments to the effect that it will not expand within the Australia–New Zealand region if the Alliance proceeds.[119] However, these comments are inconsistent with previously held views that expansion plans would be made independent of the Alliance. For instance, an August 2002 New Zealand *Herald* reported:[120]

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[119] *Australian Financial Review*, 2002, 'Up and away: Virgin's Christmas wish list', Stephen Wisenthal, 19 November.

[120] *New Zealand Herald*, 2002, 'Virgin Blue on course for a Kiwi landing despite battle of giants', Mathew Dearnaly, 9 August, http://www.nzherald.co.nz/storydisplay.cfm?storyID=2348621&thesection=news&thesubsection =general&reportid=58552.

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Despite the frenetic activity over there, Huttner said his airline has never taken its eye off the ball on this side of the Tasman and fully intends flying here within a year – *whether or not Qantas is allowed an Air New Zealand shareholding.* [Emphasis added]

Although it has yet to lodge a new application, he expects few licensing difficulties now that Virgin Blue has become registered as an Australian airline which can claim operating rights under the single transtasman aviation market.

Comments such as this are more consistent with previous statements made by Virgin Blue, which indicate their interest in expanding to Tasman and domestic New Zealand routes. An April 2001 ABC interview contained comments suggesting that entry onto domestic New Zealand and Tasman routes would have significant efficiency benefits for Virgin Blue:[121]

David Huttner [Virgin Blue]: It would be better if we could integrate the whole network as one overall unit and if we could do that by having domestic services in New Zealand and in Australia and services across the Tasman we think we could become even more efficient and if we're more efficient we can offer lower fares to people.

Other articles focus on Virgin Blue's intent to enter Tasman routes. For instance, a June 2002 article indicates that Virgin Blue sees entry on Tasman routes as a distinct option:[122]

Virgin Blue chief executive Brett Godfrey said that with the Sydney-based Patrick Corp now making up half of the airline's share holdings, the airline qualified to compete on trans-Tasman routes.

'We're going through regulatory ropes at the moment to be able to be in a position to launch,' he said.

'Whether it's New Zealand or regional Pacific services, I would say that's something we will do in the not too distant future.'

David Huttner was quoted in a June 2002 article as saying:[123]

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[121]   ABC Online, 2001, 'Virgin blue spreads wings overseas', *PM*, Friday, 27 April, http://www.abc.net.au/pm/s284449.htm.

[122]   *Nelson Mail*, 2002, 'Virgin Blue eyes Tasman', AAP, 11 June.

'There is no doubt in our mind that we will be flying trans-Tasman. It's simply a matter of when.'

Brett Godfrey was quoted in an October 2002 article as saying:[124]

'I'm assuming we'll be on the Tasman next year ... We have eight aircraft earmarked for international services by the end of 2004.'

While it is clear that Virgin Blue has expressed considerable interest in entering Tasman and domestic New Zealand routes, this is not to suggest that Virgin Blue is the only possible entrant on these routes. As we have emphasised, expansion barriers appear to be low within the Australia–New Zealand market, such that any current or potential entrant into the domestic Australia market, for instance, could readily expand onto routes in other parts of the region.

Modelling VBA profitability

Ultimately, the question as to whether entry is likely turns on its profitability. To determine whether a VBA could enter profitably on Tasman and domestic New Zealand routes, we chose entry assumptions that differ according to the future with and without the Alliance. The assumptions regarding the city-pairs and number of departures that the VBA would operate were determined in consultation with the airlines and are presented below in Table 5. Consistent with our discussion on the characteristics of a VBA we assume that the VBA operates all routes with a Boeing 737 aircraft with a capacity of 180 seats on Tasman flights and 144 seats on domestic New Zealand flights. We vary entry assumption in years 1 to 3 of the proposed Alliance, as the full schedule is implemented. After year 3 we assume that the level of entry remains stable. We have assumed the same entry assumptions on the Tasman for years 2 and 3 of the Alliance, however, in reality this entry is likely to be staggered.

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[123] *The Independent*, 2002, 'Virgin confirms trans-Tasman plan', Michael Foreman, 26 June.

[124] *Australian Financial Review*, 2002, 'Virgin Blue plans Tasman flights for next year', Jane Boyle, 21 October, p. 3.

Table 5: VBA entry assumptions, weekly departures by city-pair

Sector	Factual			Counterfactual		
	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
AKL-SYD	14	28	28	0	14	14
AKL-MEL	14	14	14	0	14	14
AKL-BNE	14	28	28	0	14	14
WLG--SYD	10	10	10	0	0	0
WLGMEL	0	6	6	0	0	0
WLG-BNE	6	6	6	0	6	6
CHC-SYD	14	14	14	0	14	14
CHC--MEL	0	6	6	0	0	0
CHCBNE	10	14	14	0	6	6
AKL-WLG	0	69	92	0	0	0
AKL-CHC	0	63	84	0	0	0
CHC-WLG	0	36	48	0	0	0

These schedules are then used together with the schedules of all other airlines, including Air New Zealand and Qantas to simulate the prices and passenger volumes for each city-pair for both the future with and without the Alliance. (Details of the methodology used for this simulation are provided in section 4.) The costs associated with the VBAs' operations are estimated using Air New Zealand's unit costs (ie costs per passenger, per block hour and per flight) reduced by a factor of 20% to reflect the lower cost structure of a VBA. The average cost per seat for a VBA is assumed to be lower than 80% of Air New Zealand's historic cost (ie prior to the introduction of the VBA+ model) because a VBA is assumed to have a higher seat capacity than Air New Zealand's full service operation. Air New Zealand currently operates Boeing 737-300 aircraft on the Tasman with a capacity of 114 seats, while it is assumed a VBA would operate Boeing 737-800 aircraft with a capacity of 180 seats. This means that the average cost per seat operated by a VBA is assumed to be in excess of 25% below the average cost per seat operated by Air New Zealand. Further details of the cost calculations used in this analysis are provided in section 5.1.

Based on the price and passenger volumes that come from the simulation analysis and the costs associated with the VBAs' operations, we estimate the profitability of VBA entry under both the factual and counterfactual. The results of this analysis are presented in Table 6 below. This analysis reveals that VBA entry is profitable both under the factual and counterfactual scenarios.

However, entry is substantially more profitable under the factual and, as a result, we believe that entry is more likely in the event of the Alliance proceeding.

Table 6: VBA profitability

Year	Factual	Counterfactual
1	$31.4	-
2	$58.5	$12.9
3	$52.6	$11.6
4	$74.0	$14.4
5	$81.4	$17.3

2.3.6 Competitive effects in air passenger services markets: summary

In the specific context of Australasia, barriers for an airline wishing to expand in the Australia–New Zealand region are low once it has established itself in some part of the region. For this reason, entry onto Tasman and domestic New Zealand routes from an airline already operating in the Australia–New Zealand region is likely to discipline the conduct of the Alliance on these routes. Moreover, the more profitable form of entry is VBA.

Our modelling demonstrates that VBA entry is more likely with the Alliance than without it. Additionally, in the world without the Alliance, capacity will be greater, so that an entrant will face more elastic residual demand.[125] Put slightly differently, the residual demand available to an entrant is more likely to allow it to cover its total costs, the lower its pre-entry capacity. As a result,

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[125]   The residual demand refers to the demand a firm (or group of firms) faces given the supply of other firms in the market. Put differently, a firm's residual demand curve reflects its sales as a function of price, given the supply of other firms in the market. The residual demand elasticity is the percentage change in a firm's sales resulting from a 1% increase in price charged taking into account the supply response of other firms in the market.

it is significantly more likely that entry will be profitable, and hence will occur, with the Alliance rather than without it.

2.4   Competitive effects in air freight markets

However one views competitive effects in air passenger service markets, competitive effects in air freight markets must be viewed as being comparatively lower. It is true that air freight services are, in many respects, a by-product of air passenger services given that most air freight is carried in bellyholds of air passenger aircraft. However, it is important to note that for specialist freight operators, entry and expansion barriers into these markets are low. In particular, many of the factors that might be argued to give rise to entry and expansion barriers for air passenger services are simply not relevant with respect to freight.

Regulatory barriers are low. As noted in section 2.1.1, the Open Skies agreement between Australia and New Zealand grants seventh freedom rights to Australian and New Zealand carriers for dedicated freight carriers. This effectively eliminates regulatory barriers for dedicated freight carriers in Australia wishing to provide freight services out of New Zealand, and similarly for dedicated freight carriers in New Zealand wishing to provide services between Australia and abroad. However, even for carriers not designated as SAM airlines, there are few restrictions that would prevent entry or expansion on the Tasman by a specialist freight carrier. We note that, Asian Express Airlines (DHL) and Cargolux each carried significant volumes of freight on the Tasman for the 2001 calendar year, while Lufthansa also operated as a freight carrier.[126]

Many of the sunk costs noted above are largely irrelevant for freight operators. For instance, marketing and advertising outlays are likely to be low. In addition, there are no expenditures required to set up lounges and frequent flyer programs (nor switching costs related to frequent flyer programs). Capital costs are also unlikely to constrain established global freight carriers such as Cargolux and Asian Express Airlines (DHL).

In terms of access to airport facilities, given the greater flexibility associated with freight in terms of timing and timeliness of delivery relative to air passenger services, landing slot issues are unlikely to significantly impact on the ability for freight operators to compete. Finally, with

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[126]   :Bureau of Transport & Regional Economics (BTRE)

respect to inter market and vertical relationships, any issues that might arise with respect to air passenger services generally do not apply to freight services.

In summary, therefore, the structural features of air freight markets suggest that it would be highly unlikely for airlines providing freight services to be able to exercise market power.

2.5   Competitive effects in the travel agency services market

There are two possible reasons why the Alliance could have competitive effects in the market for travel agency services.

The first is if the Alliance increases concentration amongst travel agents. Qantas operates Qantas Holidays as well as its corporate travel arm Qantas Business Travel, and has a 50% stake in Harvey World Travel's wholesale travel operation, Escape Holidays. However, Air New Zealand does not own or operate any travel agent operations. Regardless of changes in market concentration, entry barriers are low as evidenced by the large number of operating travel agents. The NZCC expressed the view that entry barriers were low in its Bodas determination.[127]

Second, the Alliance might foreclose customers to independent travel agents if Air New Zealand and Qantas tickets were exclusively sold through the airline's direct distribution channels (i.e. call centres and internet sites) and through Qantas's own travel agencies. If so, independent service providers in Australia might not be able to access tickets for certain routes (e.g. Tasman routes), making it difficult for them to compete in the travel agency market vis-à-vis Qantas Holidays. The requirement for travel agents to have access to airline tickets in order to compete were noted in comments made by the NZCC in its Bodas determination.[128]

Such an outcome seems unlikely in the short to medium term. At present, Air New Zealand and Qantas tickets are not exclusively distributed through their own related entities or through similar arrangements with independent agents. Indeed, as noted in section 2.1.4, Qantas is one airline that has publicly stated that it sees travel agents as its primary distribution channel in the future. It is clear that, for international travel at least, travel agents are the distribution channel through which most consumers purchase air tickets.

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[127]   Bodas determination, p. 74.

[128]   ibid, p. 27.

However, even if such distribution agreements were to be effected in the longer term, they would have to be viewed in light of trends in ticket distribution services discussed in section 2.1.4. Pressures on airlines to reduce distribution costs and rationalise distribution systems have resulted in the development of more efficient distribution channels, such as airline call centres and internet sites. For domestic tickets, the fraction of sales through these channels is particularly substantial. Growth in these direct forms of distribution at the expense of travel agents would have to be viewed in light of these trends in distribution, as opposed to as a result of the Alliance.

3 The Future With and Without Scenarios

The preceding sections summarise the competitive context, including global trends in the airline industry, which underpin the motivation for the Alliance. These inform our views as to the likely future state of the world with and without the Alliance, which we present in this section. These future 'with and without' scenarios are used as the framework for assessing the competitive detriments and public benefits of the Alliance. Identifying the relevant counterfactual (i.e. the world without the Alliance) against which the Alliance should be assessed is critical to the economic analysis, as the competitive environment is continually changing on affected routes and, in the absence of the Alliance, it is highly unlikely that the situation as it currently stands would continue to prevail.

3.1 The future with the Alliance

In order to assess the impact of the Alliance on competition, it is necessary to identify both the number of airlines that would operate on affected routes and the market shares of each airline (which, in turn, are determined by flight frequency and aircraft type), including those of the Alliance members. To estimate the public benefits that could be secured from the Alliance it is necessary to identify the number of flights that would be operated and the aircraft type that would be used. All of this information can be readily drawn from the proposed flight schedules. Therefore, we present the future with the Alliance in terms of flight schedules.

We have chosen to examine the impact of the Alliance over a period of five years, as any period beyond this is highly uncertain in terms of the level of detail required for our quantitative analysis. It is envisaged that a period of three years would be required to fully implement the Alliance, including the full schedules. Therefore, in years 1 and 2 of the Alliance we rely on flight schedules that reflect a phasing-in pattern of operation. From year 3 to year 5 we assume that the schedules remain stable, however, frequencies are increased in years 4 and 5 in line with our assumptions regarding the natural growth in demand.

In presenting the results of our analysis for the full five-year period we use a discount rate of 6%, which is approximately equal to the 90-day bill rate, in order to determine the present value of the full five years of benefits and detriments. The choice of a discount rate should ideally be made

with reference to the confidence one has that each side of the relevant trade-off will occur. Thus, in principle, one might want to discount certain items with higher rates than other items.[129] Our modelling assumes a low-risk bond rate, reflecting our confidence that the benefit estimates we have derived are likely to occur. This confidence in turn stems from the conservative assumptions we have built into our analysis.

We requested the airlines to provide NECG with the full flight schedules that would be implemented if the Alliance were to proceed, including schedules for the phase-in period. These schedules reflect the airlines' best estimation as at November 2002. The schedule for year 3 of the Alliance – that reflects the full implementation of the Alliance – is presented in Table 7 for Air New Zealand and Qantas. The shaded cells in the table are new city-pairs that the airlines do not currently operate and would not operate in the future state of the world without the Alliance.

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[129]   An alternative approach would be to convert the estimates to certainty equivalents and then discount them at a rate that reflects pure time preference.

Table 7:   Schedule for Air New Zealand and Qantas in year 3 of the Alliance, weekly departures

	Qantas	Air NZ		Qantas	Air NZ		Qantas	Air NZ		Qantas	Air NZ
AKL-SYD	64	62	AKL-NOU	0	4	AKL-HNL	0	6	CHC-ZQN	4	28
AKL-MEL	32	50	AKL-NAN	18[1]	20	AKL-LAX	20	32	AKL-ZQN	0	26
AKL-BNE	14	22[2]	AKL-APW	0	8	LAX-LHR	0	14	SYD-LAX	56[3]	0
WLG-SYD	14	20	AKL-TBU	0	10	AKL-SIN	0	14	WLG-DUD	0	26
WLG-MEL	14	0	AKL-RAR	0	14	AKL-HKG	0	14	AKL-ADL	0	14
WLG-BNE	6	12[2]	AKL-PPT	0	10	AKL-TPE	0	6	AKL-HBA	2	0
CHC-SYD	38	28	NAN-LAX	8[1]	6	AKL-NRT	0	14	AKL-CBR	2	0
CHC-MEL	12	14	TBU-APW	0	2	AKL-KIX	0	14	WLG-CBR	2	0
CHC-BNE	6	14[2]	APW-LAX	0	2	AKL-NGO	0	14			
AKL-PER	0	10	RAR-LAX	0	4	AKL-WLG	152	210			
AKL-CNS	0	4	PPT-LAX	0	8	AKL-CHC	140	178			
SYD-ZQN	2	4	NAN-RAR	0	2	AKL-DUD	0	14			
AKL-NLK	0	4	RAR-PPT	0	2	CHC-WLG	0	118			

Notes: (1) Air Pacific flights; (2) Freedom Air flights (on AKL-BNE 8 are Freedom Air flights); (3) Not part of the Alliance.

The future with the Alliance would also involve other airlines operating on many of the city-pairs that the Alliance would operate. It is assumed that airlines currently operating on the city-pairs would continue to operate and, in addition, new entry would be likely to occur. The full Qantas and Air New Zealand schedule for the factual is contained in Appendix C.

Airlines currently operating

With the Alliance it is assumed that there would be no change in the number of other airlines that currently operate on affected routes, excluding a VBA entrant on the Tasman, (based on Northern Winter schedules), however, the level of capacity operated by these airlines would increase at the same rate as natural demand growth. Table 8 below identifies the other airlines that are assumed to operate in year 3 of the Alliance, in terms of weekly departures. The natural demand growth assumptions used for increasing current levels of capacity operated by other airlines to year 3 capacity levels are presented in Table 9. The assumption that these airlines' capacity increases

only in line with natural growth is conservative. In effect, were margins to rise, it is likely that additional capacity expansion by these airlines would occur. This increase is not captured in the results set out in section 4.

Table 8: Other airlines operating on affected routes in year 3 of the future with the Alliance

City-pair	Other airlines operating	Departures per week	City-pair	Other airlines operating	Departures per week
AKL-SYD	Thai Airways, Aero Argentinas, Polynesian	28	PPT-LAX	Air France, Air Tahiti Nui	18
AKL-BNE	Thai Airways, Malaysia Airlines, Garuda Indonesia	24	AKL-LAX	United	16
AKL-NOU	Air Caledonie Intl	4	LAX-LHR	Virgin Atlantic, United, American Airlines, British Airways	94
AKL-NAN	Korean Air	4	AKL--SIN	Singapore Airlines	18
AKL-APW	Polynesian	4	AKLHKG	Cathay Pacific	18
AKL--TBU	Polynesian, Royal Tongan	12	AKL-TPE	Eva Airways	4
AKL-PPT	Air Tahiti Nui, Polynesian	6	SYD-LAX	United	32
TBU-APW	Polynesian	4	CHC-WLG	Origin Pacific, Air Chathams	56

A complication that arises in terms of other airline operations is the current alliance between Air New Zealand and United, which would be terminated if the alliance between Air New Zealand and Qantas were approved. It is assumed that the alliance between Air New Zealand and United would not cease until year 3 of the alliance between Qantas and Air New Zealand, reflecting the restriction imposed by the Air New Zealand and United agreement. Therefore, in years 1 and 2 of the Alliance the routes covered by the Air New Zealand and United agreement – AKL-LAX, LAX-LHR, AKL-HNL – would be excluded from the Alliance.

In addition, the flights operated by United are only treated as a separate airline under the factual. In the future without the alliance between Air New Zealand and Qantas, the alliance between United and Air New Zealand would continue, and hence, for the purposes of determining the

level of competition in the counterfactual, Air New Zealand and United are treated as a single airline.

Table 9: Natural growth assumptions

Route	Annual growth rate
Tasman	4.4%
Short-haul Pacific	5.0%
Long-haul Pacific	4.0%
Atlantic	4.0%
Asia (including Japan)	8.0%
Domestic	3.4%

New entry

With the Alliance it is assumed that new entry, in the form of a VBA, would occur, as discussed in section 2.3.5. In the factual the VBA enters on key Tasman routes with five aircraft and on key domestic New Zealand routes with four aircraft. The VBA scenario in terms of departures per week is presented in Table 5. Given that it is difficult to predict with certainty the level of entry that would occur in the future with or without the Alliance, alternative scenarios are considered as a sensitivity analysis in Appendix E. In particular, we consider the highly unlikely scenario of no VBA entry to determine whether the authorisation of the Alliance is dependent on the assumption that VBA entry will occur. As discussed in section 6, even in the absence of VBA entry the Alliance results in a substantial net benefit to both Australia and New Zealand.

3.2   The future without the Alliance

In the absence of the Alliance, there is a range of possible outcomes that may be considered as relevant counterfactuals. The potential 'future without' scenarios can be categorised as:

■   increased competition in which Air New Zealand and Qantas compete aggressively by increasing capacity;

- one airline contracts its operations, which may occur after a period of aggressive competition, in which case the difference between the first counterfactual and this one is a matter of timing;

- Qantas and Air New Zealand cease competing aggressively, with price and output trending toward the duopoly level, which again may occur after a period of aggressive competition; and

- Air New Zealand enters into an alternative alliance.

The first counterfactual involves the level of competition between Air New Zealand and Qantas intensifying, consistent with the behaviour observed by both airlines over the past months. For example, compared with the northern winter schedule for 2001 Qantas increased its capacity on Tasman routes by 14% for the 2002 northern winter period and on domestic New Zealand routes by 28% for the same period. Similarly, Air New Zealand has made a number of important changes to its operation including the movement from a FSA to a VBA+ in domestic New Zealand which increases the number of seats on each aircraft at the expense of the business class service. In addition, New Zealand introduced flights operated by Freedom Air on a number of routes between Brisbane and New Zealand. Air New Zealand has also recently increased the frequency of its services on the AKL-SYD route in response to competition and the importance of flight frequency to the significant level of business passengers on this route.

In the absence of the Alliance, a continuation of this situation seems highly likely, at least for the next three to five years because it is consistent with the way network carriers compete. An airline can gain advantages over it competitors by improving the frequency and scope of the services it offers, and this is reflected in the correlation between market shares and capacity shares. When one airline increases its capacity this is usually followed by an increase in capacity from other airlines attempting to retain market share. In a hub-and-spoke network, such as that operated by Qantas and Air New Zealand, this increasing capacity even occurs when the result is to reduce sector profitability. This is because from a total network perspective, it is important to retain market share on that sector for connecting flows to other parts of the network. In effect if one spoke of the network is weakened, it weakens the whole network. Hence, in assessing the impact of the Alliance in the remainder of this report we adopt as the counterfactual a future with the airlines competing by increasing capacity

However, we also recognise that aggressive competition is costly and would require the airlines to sustain losses on some routes. For how long such losses are sustainable is difficult to determine. Hence, a second counterfactual is also considered in a confidential appendix, Appendix F, which involves Air New Zealand substantially reducing capacity in response to these losses. While our

discussions with the airlines suggest that this is an unlikely scenario, at least in the medium-term, if this were to occur it would involve the selective reduction of capacity. When reducing capacity, one of the airlines would cease operating on a loss-making route and instead concentrate efforts on the most profitable routes. An airline would be highly unlikely to simply reduce capacity on a loss-making route where competition exists, since, for FSAs especially, profitability is linked directly to market and, hence, capacity shares. Therefore, a reduction (rather than elimination) of capacity on a loss-making route would not be consistent with profit-maximising behaviour.

The selection of routes on which capacity would be reduced under such a scenario is highly complex, as it involves impacts on the overall network and the utilisation of the airlines' fleet. We requested Air New Zealand provide a reduced capacity flight schedule on a confidential basis. We discuss this counterfactual and its implications in confidential Appendix F.

The third counterfactual is a "cosy duopoly" outcome under which Air New Zealand and Qantas would collude and effectively implement a strategy of market sharing. Unlike the proposed Alliance, which is based on the efficiency gains from productive coordination, this collusive agreement would be based on expected profits from anti-competitive coordination. A "cosy duopoly" outcome may be considered a relevant counterfactual for the assessment of the Alliance, as claims regarding the existence of such behaviour are usually made in reference to market structures that involve a small number of participants, the type of market structure that would likely persist in the future without the Alliance[130].

However, there are a number of reasons why we have not considered the "cosy duopoly" as a relevant counterfactual.

First, there would appear to be some serious difficulties associated with the implementation of the collusive agreement in the airline industry. Fixed costs are high, marginal costs are very low and

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[130]   For example, and without judging their validity, there have been claims that a 'cosy duopoly' characterised market structures such as the British broadcasting market (BBC and ITV); the Australian telecommunications industry where a report by NUS Consulting refers to the Australian market as "a virtual cosy duopoly" between the two main carriers Telstra and Optus; quoted by Segal S, 2002, CFO, April 2002, http://www.cfoweb.com.au/stories/20020401/13889.asp and the Australian air transport industry where Graig D, 2002, claims "another cosy duopoly is likely", http://www.acilconsulting.com.au/pdf/Tesna-Ansett_article_2802021.pdf.

the product is highly perishable. The airline industry is also characterised by quite an uncertain environment. The demand for air passenger services depends on a number of parameters that are difficult to forecast and can fluctuate dramatically in response to shocks. In addition, costs, and particularly unit costs, can change quickly. The pricing structure used in the airline industry is also complex, with sophisticated yield management systems driven by a multitude of parameters. Consequently, it is likely to be difficult for one party of a collusive agreement to monitor the actual behaviour of other parties to the collusive agreement and it may not be obvious whether one party's behaviour is the consequence of a change in market conditions or of its cheating. The consequence being that a collusive agreement would be difficult to implement in the airline industry, or at least more difficult to implement than in relatively stable industries. Economic theory does provide some tools of analysis to take into account such issues[131] but the modelling of such complex strategies would be largely arbitrary.

Second, the cosy duopoly counterfactual lacks a credible characterisation. The simplistic theory of collusion[132] is based on the fact that firms would be better off not competing and would rather coordinate their pricing behaviours in order to act as a monopolist. However, it is often the case that a party to a collusive agreement has an incentive to cheat; that is, secretly and unilaterally reneging when the others are behaving according to the implicit collusion. Typically, there is a trade-off between the immediate gain from cheating and the future losses associated with the "punishment"[133], which are the (lower) profits associated with the return to a situation of fierce competition.

This is well established in theory[134] – at least in its simplistic form – but in practice it is difficult to model such a dynamic enforcement of a collusive arrangement. For example, how can the analyst

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[131]   For the demand shocks, see Green E J and Porter R H, 1984, "Noncooperative Collusion Under Imperfect Price Competition" *Econometrica*, 52:87–100. For the cost shocks, see Kyle B and Athey S, 2001, "Optimal Collusion with Private Information", Rand Journal of Economics, 32-3:428-465.

[132]   See Stigler G, 1964, "A Theory of Oligopoly", *Journal of Political Economy*, 72:44-61.

[133]   The punishment phase is the rational reaction of parties being aware of cheating. In a nutshell, when the cheating becomes apparent it is in the best interest of other parties to the collusive agreement to retaliate and not to let the cheater taking the entire anti-competitive profits.

[134]   See Osborne D, 1976, "Cartel Problems", *American Economic Review*, 66-5:835-844.

define the punishment? Should it be a Cournot pricing, marginal cost pricing, lower-than-cost pricing or any other forms of potential behaviour? Further, what would be the optimal length of punishment? Should the modeller assume it to be infinite, finite or zero? What would be the collusive price? Should it be the monopoly price? The price implemented by a dominant firm with competitive fringe? Or should it be any other price taking into account the incentive to cheat, given that the higher the collusive price, the stronger the incentive to cheat?[135]

In other words, the problem associated with the "cosy duopoly" as a counterfactual is that the collusive solution is impossible to define, as it involves a multitude of possible parameters, which would need to be assumed without robust empirical evidence. This is not to say that economics has nothing to say about collusive behaviour. For example, it is possible to analyse a real-world situation and to test for collusion (including to estimate the parameters described above such as punishment strategies and collusive behaviour) if empirical data are provided.[136] Also, it is possible to build stylised models of collusion to understand the mechanics of collusion. However, it is our view that to build a collusive model for the counterfactual based on arbitrary modelling choices would not provide a valid decision tool.

Third and importantly, as explained above, a "cosy duopoly" could be defined, at best, as a merger without the efficiency gains associated with the productive coordination between the airlines. Therefore, even if possible, there would seem little point in analysing this counterfactual, as it would impose only a detriment on Australia and New Zealand, and hence the Alliance would always produce a net benefit in comparison.

A fourth possible counterfactual is that Air New Zealand enters a strategic alliance with another investor. We have been instructed that this alternative has been explored and while there do exist other potential investors, these are highly unlikely to eventuate due to the general downturn in the airline industry, particularly post September 11, and the financial difficulties faced by such possible investors as United Airlines. Another alliance is unlikely to be able to secure the cost savings available in the Alliance, as the overlap with other networks would be limited compared

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[135]   For example, see Porter R H, 1983, "Optimal Cartel Trigger Price Strategies." *Journal of Economic Theory*, 29:313–338; and Porter R H, 1985, "On the Incidence and Duration of Price Wars", *Journal of Industrial Economics*, 33-4:415-26.

[136]   See Finkelstein M O and Levenbach H, 1983, "Regression estimates of damages in price-fixing cases" Law and Contemporary Problems 46-4:145- 169.

to the Qantas network. Even if an alternative alliance were possible, this in itself would not represent a counterfactual. Even with an alternative alliance, one of the other counterfactuals would still need to eventuate.

In the absence of the Alliance, Air New Zealand and Qantas would continue to compete aggressively for the next three to five years by increasing capacity both on the Tasman and in domestic New Zealand, after which Air New Zealand may reduce capacity in response to ongoing losses and in the longer-term may exit entirely. Additionally, and importantly, our discussions with Qantas and Air New Zealand also lead us to conclude that a sustained period of aggressive competition is the counterfactual that each airline views as the most likely.

Based on confidential information received from both of the airlines we have constructed flight schedules for Qantas and Air New Zealand. These schedules are presented in full in a confidential Appendix D.

We assume that the other airlines competing on the affected routes remain unchanged, as set out in Table 8. This is a conservative assumption in that were competition between Qantas and Air New Zealand to intensify further, as anticipated under the counterfactual, some exit might occur. We also allow for the possibility of new entry in the future without the Alliance. In the counterfactual we assume a lower level of entry than in the factual given that the total market capacity is substantially higher, and hence the space for a new entrant is smaller. In particular, we assume the VBA enters with four aircraft operating on key Tasman routes. As in the future with the Alliance we consider alternative VBA entry scenarios, including no VBA entry, as a sensitivity analysis in Appendix E. The details of the VBA entry assumptions under the counterfactual in terms of weekly departures and routes operated are presented in Table 5.

4 Competitive Detriments

In NECG's view, the most important source of potential competitive detriments that would flow from the Alliance between Qantas and Air New Zealand is the coordination of pricing and scheduling in the air passenger services market. Therefore, NECG's analysis of competitive detriments focuses on the potential price and output impacts of the Alliance on the air passenger services market.

To quantify the price and output impact of the Alliance, we have developed a merger simulation model based on an oligopoly under Cournot competition. Although we recognise that the Alliance between Air New Zealand and Qantas does not constitute a merger in the company law sense, the Cournot model nevertheless provides a useful approach for assessing a transaction of this type. This section first describes the structure of this model and then presents the results. A detailed description of the model and an analysis of the sensitivity of the model results to variations in input assumptions are provided in Appendix E. All results in this section are presented in 2001/02 Australian dollars.

4.1 Structure of the model

Our analysis involves the modelling of an oligopoly under Cournot competition. The fundamental assumption of Cournot modelling is that the firms use output rather than price as their main strategic variable. This assumption is widely used in the aviation industry and has found empirical support in the literature. More sophisticated models, such as a two-stage model in which capacity and price are chosen sequentially, are possible. However these would require a greater range of assumptions, take significantly longer to develop, and would be more difficult to interpret. We have therefore followed mainstream practice in adopting the Cournot framework. Appendix G provides further details on the empirical and theoretical background to the use of Cournot competition as a model of oligopolistic behaviour in the airline industry.

4.1.1 Basic logic and implications for VBA entry

One of the limitations of this model is that it produces a single average retail price. Because of this and for reasons explained below, the model understates the price impact of a VBA. Within the Cournot model: