concentration.[157] Despite this, the evidence is that to at least 1997 there has been no increase in rents attributable to labour.[158]

Even if one accepts that x-inefficiency would emerge, the degree of x-inefficiency is likely to be small. Indeed, 0.5% represents an upper bound on the extent that x-inefficiency could erode the efficiency gains of the Alliance not passed onto consumers. This estimate, even if an accurate measure of x-inefficiency (and it is rather an overestimate), exaggerates actual welfare loss, since, as noted above, x-inefficiency includes transfers as well as waste.

The x-inefficiency argument is that the cost efficiencies gained by the Alliance will be eroded by x-inefficiency losses over time. Comparing, for a wide range of airlines, the difference between US and non-US carrier productivity prior to liberalisation of the US market to the same difference after deregulation suggests US productivity increased by 0.5% per annum due to liberalisation.[159] This is necessarily an overestimate of any likely loss of cost efficiency gains in the present case as compared with the counterfactual, and not just for all the reasons discussed above and not taken into account here. The 0.5% change is in part driven by the high degree of regulation in the US market prior to deregulation, which likely constrained technical efficiency growth in ways that it is not constrained in the current circumstances. In the present case, and in contrast to the US

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157 The US airline industry was effectively deregulated in 1978. Market concentration by most measures fell over the first nine years of liberalisation and then began to rise. Concentration measured by firms in the industry fell initially, and then more than reversed itself almost a decade later. These statistics probably exaggerate the actual rise in concentration. Focussing on routes, a downward trend was mildly reversed from 1986 over shorter routes, and from 1990 for routes over 2000 miles. The mild reversal of the route statistics probably underestimates actual concentration because it does not take account of airline control of given airports, especially landing slots and gates. See Viscusi, et al., *op. cit.*, pp. 552–72, especially Figures 17.9 and 17.10, and p. 572.

158 Hirsh, Barry T. & Macpherson, David A. 2000, 'Earnings, rents and competition in the airline labor market', *Journal of Labor Economics*, 18 (1), pp. 125–55.

159 Annual growth in the productive efficiency of US carriers pre-deregulation was 0.2% lower than non-US carriers. After liberalisation the US carriers productive efficiency growth exceeded that of non-US carriers by 0.3%. Caves et al., 1987, 'An assessment of the efficiency effects of the US airline deregulation via an international comparison', *Public Regulation: New Perspectives on Institutions and Policies*, ed by Elizabeth E. Bailey, MIT Press, reported in Viscusi et al., *op. cit.*, p. 566.

market pre-deregulation, potential and active carriers have substantial freedom to set price and enter and exit particular routes.[160]

Rent-seeking

Rent-seeking occurs when economic agents incur expenses to place themselves in a position where they can claim rents generated by market power. A simple example is lobbying to be granted a monopoly. Rent-seeking is an economic waste. Rather than generating surplus, resources are used to claim existing rents or create new ones. Every dollar spent in such activities only reduces available surplus, and in the case where new market power is sought, further reduces surplus on success.

The ACCC has suggested that if an alliance of this kind creates cost efficiencies, as compared with the counterfactual, then it will lead to an ***increase*** in rent-seeking.[161] Obviously, resources expended in rent-seeking prior to any Alliance cannot be counted as waste attributable to the Alliance, as they occur in both the factual and counterfactual. But equally, there is no reason to believe that rent-seeking would be ***increased*** under the Alliance as compared with the counterfactual. Failure or modification of the Alliance does not remove the possibility of gaining these or other cost efficiencies through alternative schemes, including involving combinations of players not possible if the Alliance were to proceed and lobby for policy changes.[162]

Finally, the x-inefficiency argument discussed in the previous section cuts across the rent-seeking argument. If it is believed that x-inefficiency is likely to erode cost efficiencies gained by the Alliance – and we have argued that this is not only unlikely, but that to the extent that x-

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160 Viscusi, et Al. *op. cit.*, pp. 552–68.

161 ACCC, September 2002, op. cit., para 6.95.

162 It might be argued that if the authorities could credibly commit to never allowing mergers for which benefits exceeding costs turned on gains to shareholders, then rent-seeking in these cases would never occur. However, such a commitment is not credible. Certainly, it has not been made, let alone credibly made, as of the present date. Moreover, even if such a commitment could be made, it would be inefficient so long as the extent of rent-seeking was exceeded by the gain from cost efficiencies.

inefficiency occurs, it would be minimal – then the investing parties would discount this from their expected gains and accordingly reduce their rent-seeking activity. In short, rent-seeking is curbed by the extent to which x-inefficiency can be expected to occur.

In summary, it is likely that rent-seeking would be identical under both the factual and counterfactual. Even if it were expected to be higher under the counterfactual (and it is hard to see why this would be so), losses due to rent-seeking cannot exceed cost efficiencies expected to accrue to the firm, which cannot include transfers expected to be lost to x-inefficiency.

5 Public benefits

This section presents the theory and empirical estimates of the public benefits associated with the Alliance. We begin with a summary of the empirical results in Table 15 and Table 16 below. All valuations provided in this section are annual valuations denominated in millions of 2001/02 Australian dollars.

Table 15: Summary of total annual public benefits, New Zealand, $million

Year	Cost savings	Scheduling	New direct	Tourism	E & M	Freight
1	-$4.08	$9.16	$11.30	$70.47	$34.00	$1.07
2	$91.13	$8.65	$10.66	$128.52	$32.08	-$0.04
3	$159.24	$8.16	$10.06	$128.66	$30.26	$2.86
4	$153.99	$7.69	$9.49	$120.35	$28.55	$2.86
5	$145.36	$7.26	$8.95	$113.20	$26.93	$2.86
Total	$545.64	$40.92	$50.45	$561.20	$151.81	$9.63

Table 16: Summary of total annual public benefits, Australia, $million

Year	Cost savings	Scheduling	New direct	Tourism	E & M	Freight
1	-$13.84	$2.50	$11.30	$33.98	$0.00	$0.42
2	$58.55	$2.36	$10.66	$77.08	$0.00	-$0.01
3	$121.96	$2.23	$10.06	$111.28	$0.00	$1.11
4	$119.49	$2.10	$9.49	$105.18	$0.00	$1.11
5	$112.81	$1.98	$8.95	$98.76	$0.00	$1.11
Total	$398.97	$11.17	$50.45	$426.28	$0.00	$3.74

The remainder of this section explains each of the benefits presented in the table above and the methodology used to quantify these benefits.

5.1 Cost efficiencies

Strategic alliances between two companies often result in benefits through cost rationalisation, efficiencies, or synergies. There are many potential sources for these, including a reduction in variable costs as a result of the elimination of pre-existing cost differentials. In addition, the strategic alliance between parties can allow the achievement of economies of scale. We first deal with potential for the achievement of additional economies of scale as a result of the Alliance.

5.1.1 Economies of scale

Costs that are subject to economies of scale fall into two broad categories, these being costs that are duplicated across the carriers, and costs which while not being duplicated, nevertheless present significant economies of scale. There are however, some limits on how much duplication can be eliminated. For example, head office functions will not change significantly, and both airlines intend to maintain their own international sales network, albeit with new instructions to 'cross-sell' each other's services.

Functions likely to be subject to some scale economies include lounge maintenance, IT system maintenance and possibly front line functions such as baggage handling and check-in services. On the other hand, there are additional costs involved in the harmonisation of systems, particularly in the case of IT systems, where integration can be very costly.

Although it is possible to identify the areas in which scale efficiencies are likely to emerge, reliably predicting the extent of such efficiencies would be extremely difficult. The parties to this Alliance acknowledge that integration is costly but expect to recoup those costs over a three to five year horizon, through the creation of a sustainable lower cost structure. We consider that such an outcome is feasible and have no convincing evidence against it, in either direction. Accordingly, it is our view that the net impact of scale economies will be neutral once the cost of securing those economies is taken into account. We have therefore not included either the benefits or the costs of achieving such economies in our quantification.

5.1.2 Improved aircraft selection

The carriers have agreed that both brands will continue to fly and that the choice of which aircraft to use on particular routes will be determined by joint corporate imperatives. While cost minimisation is not an absolute goal (being constrained by appropriate service deliveries from which revenues flow), it is nevertheless apparent that costs can be saved by reducing duplication of departures and selecting aircraft carefully.

The data made available to us demonstrate that there is some variation in cost advantages between the carriers, when assessed across different aircraft. By selecting the lower cost provider of particular aircraft types where possible, a genuine synergy is available from the Alliance.

5.1.3 Estimation

We have constructed a bottom-up cost model to study various aspects of this Alliance. This model classifies the major operating costs of each airline according to whether they are caused primarily by:

- passenger numbers ($/passenger);
- block hours[163] ($/block hour); or
- departures ($/departure).

Operating costs are taken from the historic financial accounts of the airlines and are used to construct unit costs by the cost drivers listed above. Unit costs are calculated by major route and by aircraft type. These unit costs are then multiplied by the relevant cost driver to determine the total operating cost associated with the factual and counterfactual schedules. The passenger volumes under the factual and counterfactual scenarios come directly from the solution to the Cournot model of competition. The total market passengers are allocated to each aircraft operated by Qantas and Air New Zealand on the basis of capacity shares (the implicit assumption is that load factors across all airlines are equal). Block hours were provided to us by the airlines for each city-pair and aircraft type. The number of departures comes directly from the factual and counterfactual schedules.

Aircraft capital costs are calculated based on the number of aircraft of each type used in the factual and counterfactual schedules. Each airline provided this information to us on a confidential basis. Schedules of aircraft costs by age were then used to calculate the capital costs associated with the fleets under the factual and counterfactual. Straight-line depreciation was adopted for the purpose of annualising capital costs together with a cost of capital of 8%.

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163 Block hours are the sum of flying time, taxiing time and the time spent at the terminal before and after flights.

Comparing the factual and counterfactual schedules under a variety of assumptions about VBA entry, there are considerable cost savings available from aircraft rationalisation, because the counterfactual schedule involves significant under-utilised capacity compared with the factual schedule. The factual results in higher prices on a number of routes (relative to the counterfactual). On these routes, higher prices translate into fewer passengers travelling under the factual scenario compared with the counterfactual. The costs associated with the reduction in passengers travelling due to price increases are deducted from the total cost savings to avoid double counting.

The total annual valuation of cost efficiencies needs to be split between countries. This was achieved by applying the comparison of net positions of each airline, measured in accordance with the accounting methods agreed by them and after allocating 60% of their respective profits to be retained by them on the basis of capacity. If the comparison reveals that Qantas' net position exceeds that of Air New Zealand, Qantas will pay half the difference to Air New Zealand. Similarly, if Air New Zealand's net position exceeds that of Qantas, Air New Zealand will pay half the difference to Qantas.

Table 22 below presents the cost savings of the Alliance relative to the counterfactual by Route Group and airline for year 3 of the Alliance (a negative cost saving represents a higher cost under the factual than the counterfactual).

Table 17: Estimated cost efficiencies by Route Group, year 3, $million

	Australia	New Zealand	Total
Tasman	$17.87	$15.18	$33.05
Queensland	$21.41	$10.03	$31.43
Pacific Islands	-$5.49	-$21.95	-$27.44
North America	$71.60	$94.34	$165.94
Atlantic	$0.43	$1.72	$2.16
Hong Kong	-$3.86	-$15.43	-$19.29
Taiwan	-$0.31	-$1.25	-$1.56
Singapore	$18.75	$74.99	$93.74
Japan	-$1.86	-$7.44	-$9.30
Domestic New Zealand[1]	$18.50	$28.75	$47.25
Total	$137.03	$178.93	$315.96

1 excludes NZ Link

The costs associated with new direct flights operated in the factual but not in the counterfactual have also been deducted from the cost savings above. The costs associated with the operation of new direct flights are calculated in the same way as the costs for other routes. These costs are presented in Table 18 below for year 3 by city-pair and sum to $24 million per annum. Therefore, the net cost savings associated with the Alliance are $316 million in year 3 (or $281 million in present-value terms).

Table 18: Costs associated with new direct flights, year 3, $ million

Sector	Cost
AKL-ADL	$16.1
AKL-HBA	$2.6
AKL-CBR	$2.6
WLG-CBR	$2.6
Total	$24.0

5.2 Scheduling efficiencies

The Alliance is likely to result in a significant change to the scheduling of flights, particularly on routes currently served by both carriers. These changes are likely to generate several classes of public benefits, namely:

- improved flight frequency;
- enhanced connectivity; and
- additional direct services.

In this section, we outline the nature of each of these types of public benefit, with particular attention to the lines of demarcation which have been assumed in our quantitative work.

5.2.1 Improved flight timing

When two carriers using the same business model are in direct competition on a route, each has a strong incentive to schedule flights at roughly the same times as its rival. By doing so, each has the highest probability of winning business from their rival. While there is also some countervailing pressure,[164] the reality is that there is considerable alignment between the schedules of Qantas and Air New Zealand, both on the Tasman, and in the domestic New Zealand market.

This incentive does not exist under coordinated management, and indeed the reverse is true. The objective for a single operator is to arrange the schedules so that the market is covered as completely as possible, minimising "spilt" traffic that cannot be served because of schedule gaps.

Why is it that a single operator closes gaps which exist when two similar carriers serve the market? The reason is that these gaps can be closed without cannibalising existing business. To understand this, consider the Auckland–Melbourne route currently served by both carriers, the schedule for which we present in Table 19 below.

Table 19: Flight schedule for Qantas and Air New Zealand: Auckland–Melbourne route, 20 June 2002

Carrier	Depart	Arrive
Qantas	06:00	07:55
Air New Zealand	06:45	08:45
Air New Zealand	15:30	17:15
Qantas	16:15	18:10

The tight coherence between these schedules is partly caused by the desire of both airlines to achieve satisfactory utilisation rates on the aircraft, each of which typically flies four sectors per day (i.e. two return trips). However, competition for travellers leaving at key times of the day (typically at either end of the business day) is also a significant determinant of this scheduling pattern.

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164 There are two types of offsetting pressure. The first comes from the fact that schedule-matching also exposes one's own business to the possibility of capture. Secondly, to the extent that this practice leaves 'gaps' in the schedule, some business (that of people who only want to travel in a 'gap') will be lost.

Now consider the possibility of Air New Zealand serving the gap during the day in this schedule, i.e. between 06:45 and 15:30, with an aircraft recently returned from a Pacific Islands journey. Under the present competitive structure, this is likely to be unattractive since it would leave Qantas as the only operator for early morning business passengers. Under combined management, however, it is at least plausible that one of the early morning flights might be abandoned in favour of a new mid-morning/mid-day service.

The public benefits that flow from the addition of such a flight are significant. The main benefits accrue to consumers who want to fly in or near this time slot but currently cannot. At present, some of these consumers book an earlier or later flight, which reduces the value they receive from their travel. Other consumers affected by the existing schedule gap simply do not travel at all. In this sense, it is the competitive process itself that reduces output and reduces the welfare of those consumers served.

Since this proposition may conflict with the prior views of many people, it is worth noting that it is far from novel, finding considerable support in the published literature. For example, the incentive of a monopoly air service operator to cover the entire market in this way has been explicitly observed.[165] This effect is also consistent with the economic theory of multi-product monopoly, and particularly the finding that monopoly providers of differentiated products and services tend to supply greater diversity than would be found in a competitive environment.[166]

Valuation of flight timing benefits

The parties have provided us with proposed schedule changes which will almost completely eliminate schedule duplications on the Tasman routes. We have constructed a model which maps these schedule changes into a set of public benefits, and will now explain how this model works. Before doing so, we note for completeness that these valuations provide the sole exception to the factual–counterfactual differential analysis adopted for all other quantifications in this report. Because we do not know the precise timing of flights under the counterfactual, our analysis of

165 Wojahn, O. W. 2001, 'Airline Hub Congestion and Welfare', *International Journal of Transport Economics*,vol. 18, no. 3, pp. 307–24.

166 Tirole, J. 1988, *The Theory of Industrial Organization*, MIT Press, Cambridge, Ma, p. 105.

flight frequency benefits has been restricted to valuing the public benefit associated with moving from the status quo to the world with the Alliance.

In estimating the magnitude of these benefits we began with Tasman intra-day flight schedules for pre- and post-Alliance as provided by the carriers. Using these we calculated the minimum required wait time on any given day for both the current and proposed schedules. These wait times were then scaled by the expected number of passengers who would be waiting, based on the assumption that desired passenger travel times were distributed uniformly over the 5 am to 12 am interval.[167]

The above process provides aggregate measures of minimum wait time per day measured in minutes (across all expected passengers) for both the current and proposed schedules. The difference between these represents the daily benefit from the schedule change (as measured by minutes); these can then be scaled by the days of the week for which the schedule change takes place, and the number of weeks in a year to arrive at the annual benefit measures per route in minutes, the final step is to multiply this by a valuation of time.

The value of time will clearly vary across and within customer types and cannot be assessed with any real accuracy. In our modelling, we have assumed a value of $20 per hour for leisure passengers and $100 per hour for business passengers. These estimates appear conservative when compared to estimates derived in international studies.[168]

This process was carried out for each city-pair for which a scheduling change is proposed to occur and then aggregated for New Zealand and Australia. Allocation of the total benefit between the two countries concerned was done in accordance with the origin city in the city-pair, i.e. the benefit from CHC–SYD was allocated to NZ, while the benefit from SYD–CHC was allocated to

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167 We have experimented with a bimodal distribution of departure time preferences, but found this somewhat more demanding of subjective assumptions as to the relative heights of the peaks and troughs.

168 See for example Association of European Airlines 1998, Airline Alliances and Competition in Trans-Atlantic Airline Markets, 21 August, prepared by PWC. This study values the business time at approximately US$100 per hour and leisure time in the range of US$10-20 per hour. Also, see Tri-State II High Speed Rail Feasibility Study prepared by Transportation Economics & Management Systems.

Australia. The rationale for this approach is that outbound scheduling variety is more likely to benefit those domiciled in the origin city. This is at least partly reflected in the tendency of airlines to tailor advertising campaigns by city.

The result is a total benefit to Australia of $2.5 million and to New Zealand of $9.2 million per year.

There is one further point of interest which also relates to the following section. The measure provided above is a conservative valuation due to the fact that saving time (or having an increased flexibility of choice) at one point in any given process (be it an airline schedule or otherwise) provides positive flow-on benefits with respect to the timing of all the following steps in that process.

That is, with respect to airline schedules, if a passenger has to catch a series of connecting flights to reach his or her destination, and is able to book a time for the first flight that more accurately reflects that passenger's optimal departure time, this increases the probability that it will be possible to book connecting flights at times closer to those that are optimal. Hence the passenger receives benefits in the initial flexibility increase, and also receives benefits on connection bookings even if the associated connecting flight schedule remains unchanged. We have only estimated the first of these effects due to the second being dependant upon the assumed connection pattern/s, so that our valuation must be a conservative one (as increased frequency cannot make scheduling coordination worse).

5.2.2 Enhanced connectivity

The second general type of scheduling efficiency concerns the opportunities for passengers to connect seamlessly with onward services. The Alliance will enhance connectivity in this way for passengers arriving in Australia on Air New Zealand, and to a lesser extent for those arriving in New Zealand on Qantas.[169] It should be emphasised that this benefit only applies to passengers and not to their baggage, since interlining of baggage is already available to passengers on both carriers.

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169 Since Qantas provides trunk route service in New Zealand, only those travelling to onward New Zealand destinations beyond these trunk routes would benefit from this.

While it is theoretically possible for the carriers to arrange this enhanced connectivity under the current competitive environment, the chances of this actually occurring are extraordinarily low. Competition among FSAs is strongly dependent on the reach and depth of the network which can be offered to travellers. Because of this, it would be quite imprudent for any FSA to allow a rival to 'piggy-back' on its network in a competitive environment. As a result, the probability of this class of public benefit being secured without the Alliance (or a similar arrangement) as being effectively zero.

While enhanced connectivity is definitely a benefit associated with the Alliance, the quantification of that benefit is problematic. For example, it is not the case that passengers will necessarily take less time to make interline connections – that will depend on the schedules themselves. Rather, the primary benefits are likely to be slightly less tangible. The reduction in stress associated with receiving all boarding passes at the start of the journey, for example, and the fact that the consequences of delays are likely to be borne by the airline to a greater extent, are examples of these effects. We have no reliable way of evaluating these benefits, though it is apparent that they exist. Accordingly, this benefit is excluded from our quantifications, which are consequently more conservative in understating the net public benefits from the Alliance.

5.2.3 Additional direct services

The third type of scheduling efficiency arises from the supply of additional direct services. This efficiency is best explained using an example. Consider the origin-destination demand for travel between Auckland and Adelaide. This is currently served by a combination of both carriers who compete for the available business on the Tasman leg of the journey. A traveller wanting to go to Adelaide on Monday and return on Friday is offered no direct flights,[170] with connection being required at Melbourne, Sydney or Brisbane. Across 13 service offerings in each direction, the average journey time is 8 hours 57 minutes from Auckland to Adelaide and 8 hours 5 minutes for the return journey.

While the business case for a direct service between Auckland and Adelaide is clearly unviable for either carrier at present, this case is significantly improved by the Alliance. This is because the Auckland–Adelaide traffic, currently being shared across the Tasman, can be aggregated. This

170 This example was constructed using Qantas' schedules for Monday 24 June (morning flights) and Friday 28 June (afternoon flights). Air New Zealand's website offers similar services.

would approximately double the volume expected for a direct service, relative to the status quo for either airline.[171]

This source of benefits is distinctly different from the flight frequency benefits discussed above. In that case we looked at increased flight frequency on a given route due to the spare capacity created by the loss of incentive to compete on flight scheduling. In this case we are looking at a situation where, as the market currently stands, a given route is unprofitable (e.g. Auckland to Adelaide direct), and hence not served, whereas under the proposed strategic alliance the effect of increased demand makes servicing that route profitable.

The benefits arising from new direct services fall into three broad categories. Firstly, those passengers who currently travel indirectly can complete their journeys much more quickly and with significantly less effort. Secondly, the existence of a direct service itself stimulates demand on that city-pair, so the number of travellers increases. Finally, because traffic is taken off the indirect flights, these have additional capacity which airlines have an incentive to fill, leading to lower prices.

These effects illustrate the real social value of obtaining deeper and more extensive networks. The carriers have indicated to us that there will be four new direct routes under the Alliance: Auckland–Adelaide, Auckland–Canberra, Auckland–Hobart, and Wellington–Canberra. We now explain how we have valued the social benefits arising from these new services.

Benefits from new direct flights

Our estimates of the benefits from direct flights pivot around the time-saving associated with the new direct services, and the valuation that travellers put on that saved time. Thus calculation of the total direct service benefit is as follows:

- We firstly obtained the flight times of the most direct services currently available (on average) for each of the city-pairs. Examples are given in Table 20 for three of these routes:

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171 Moreover, even the counterfactual schedules supplied do not envisage any of the direct services evaluated here.

Table 20: Flight times for indirect flights as flown by Qantas on 19 July 2002

Departure city	Depart time	Arrival city	Arrive time	Flight time
		Auckland–Adelaide		
AKL	06:25	MEL	08:20	
MEL	10:10	ADL	10:55	275 min
		Auckland–Hobart		
AKL	06:25	MEL	08:20	
MEL	09:20	HBA	10:30	250 min
		Auckland–Canberra		
AKL	06:15	SYD	07:40	
SYD	09:15	CBR	10:05	230 min

- We then estimated the flight time of a direct service between each of the city-pairs. This was done based on the cruising speed of a Airbus 320, as it is this aircraft which is currently scheduled to service the routes. For these example routes, the results of that analysis was flights times of: 3 hours and 50 minutes for Auckland to Adelaide; 2 hours and 50 mins for Auckland to Hobart; and 2 hours and 40 minutes for Auckland to Canberra.

- The difference between these two flight times (i.e. the most direct indirect flight time and the estimated direct flight time) was taken as the time measure of the benefit from the new direct services per flight per city-pair. Multiplying this by the number of new direct flights per annum, and the expected number of passengers on those new flights (based on the number of seats in the Airbus 320 under a typical 2-class configuration and the historical trans-Tasman load factor) provides a total annual measure of the benefit in minutes.

- We then multiplied this time measure of the benefit by a measure of the dollar valuation of time saved by the travellers. This valuation was taken to be $20 per hour for leisure passengers and $100 per hour for business passengers, which as noted earlier we believe to be a conservative valuation. The result of this step is dollar valuation of the total annual benefits from the addition of a new direct service.

The above process was carried for each of the new city-pairs scheduled to receive a new direct service, these measures were then aggregated to provide a single benefit measure for addition of these services. The total estimated benefit in year 3 is $23 million per annum (or $20 million in present value terms).

We split this benefit evenly between the countries on the grounds that all new direct routes are trans-Tasman, and traffic across the Tasman is approximately evenly balanced between New Zealanders and Australians.

5.3 Impact of the Alliance on tourism in Australia and New Zealand

The Alliance has the potential to significantly impact on tourism in Australia and New Zealand in three principal ways:

- Qantas Holidays will have an incentive to market its products in New Zealand under the Alliance. This will generate additional tourists for New Zealand and, because of dual destination travel, also for Australia.
- The Alliance will improve the effectiveness of promotion by national tourism bodies and the parties.
- New fares and products could impact on arrivals.

5.3.1 Qantas Holidays

Qantas Holidays ('QH') has grown by an average 7.6% per year from 1998 to 2002 to become a significant division of Qantas Airways Limited with $1.1 billion of revenue in 2002. As shown in Table 21, in recent years, QH Tours has sold holiday packages to approximately 550,000 passengers for domestic travel within Australia each year and to approximately 400,000 Australians for outbound (overseas) travel.

Table 21: QH Tours Business Scope

Domestic	Outbound	Inbound
Travel within Australia	Travel to an international destination from Australia	Travel to Australia from an international point of departure
550,000	400,000	165,000
15 regions Major events	39 destinations globally	Multiple points of origin to multiple destinations
Australian Travel Agents Consumers Direct		QUI UK QHI Japan GSAs HTT/Tour East (Asia)

Source: QH Tours

Qantas Holidays has instructed us that, under the Alliance, this network can be leveraged to increase penetration in the regions where QH's global footprint is strong and the markets for New Zealand inbound tourists are growing. Drawing on its expertise and market knowledge of QH's management team QH estimated that 50,000 passengers per annum, over and above natural market growth, could be achieved under the Alliance (Table 23). QH indicated that this expansion in tourism demand would be achieved through:

- promoting New Zealand as a major holiday destination in all QH's promotional material available through its overseas network;
- expanding QH's product portfolio in New Zealand;
- introducing NZ/Australia combined trips/packages;
- specifically targeting the 'events' market in New Zealand; and
- increasing access to air capacity through a combined network of Air NZ and QF establishing a local presence and delivery capability (e.g. Inbound Tour Operator).

QH has estimated that these marketing initiatives would involve an additional outlay of about $12 million per year. To put this expenditure in perspective it is equivalent to about 25 per cent of the annual spend by TBNZ on marketing New Zealand. It thus has the potential to significantly stimulate tourist demand for the New Zealand destination.

Tourism Futures International (TFI) has reviewed the QH estimates. They calculated that QH had achieved a market share of 7.3 per cent of the inbound holiday passengers to Australia. If the same market share were achieved in New Zealand QH would achieve sales of around 73,000 overseas visitors per year under the Alliance.

Table 22: QH Tours Business Scope

Holiday market	Visitors to NZ	Potential for QH	Additional visitors
	('000s)		('000s)
Australia	241	6.0%	14
Asia	197	5.5%	11
Japan	123	6.0%	7
North America	148	5.0%	7
Europe	234	4.0%	9
Rest of World	70	1.0%	1
Total	1,013	4.9%	50

Source:TFI

TFI also compared the QH estimate in terms of expected growth in the tourist market in New Zealand. For example, the Tourism Research Council of New Zealand (TRC) forecasts an annual growth of 6% per year to 2008. TFI estimated that the QH projections would be equivalent to just below one-half of one year's growth of the "leisure market" in New Zealand.

On the basis of its analysis TFI have concluded that 50,000 additional QH tourists is a reasonable proposition based on the share QH Tours has achieved of the key inbound visitor markets to Australia and the additional potential arising from the other elements of the alliance.

TFI has also advised us that currently around 30% of non-Australian visitors to New Zealand also visit Australia. However, because the extra 36,000 non-Australian tourists under the Alliance would be purchasing a QH holiday package, TFI has advised that the share of these tourists travelling to Australia would rise from the historical level of about 30% to about 50% under the Alliance. TFI has advised us that they estimate that the QH initiatives under the Alliance would generate an additional 18,000 tourists for Australia per annum.

TFI has advised that in addition to the tourists generated through QH initiatives, additional tourists could be generated through improved promotion effectiveness and/or increased promotion. These effects are considered in the following section.

5.3.2 Improved promotion effectiveness and levels

The Alliance will provide opportunities for significant improvement in the effectiveness of existing promotion activities. There is also potential for the Alliance to increase promotional expenditure.

Promotion effectiveness

An alliance between the airlines would open up opportunities for cooperative advertising, primarily in the area of retail sales promotion in home markets. Qantas currently advertises fares to New Zealand in Australia, and Air New Zealand likewise promotes business to Australia within the New Zealand market. The possibility of cooperative advertising could reasonably be expected to lead both to more effective promotion (and hence market stimulation), as well as some potential for rationalisation of expenditure. This would free up existing expenditure for promotion in other areas. In effect, the Alliance would provide the opportunity to redirect effort into growing the market as opposed to competing for share.

Offshore marketing opportunities would also rise significantly under the Alliance. In markets such as Asia in particular, the prospect of being able to offer a streamlined combination Australia/New Zealand itinerary by triangulating with a combination of QF/NZ would unlock some strong marketing opportunities. Currently, Qantas invests in cooperative advertising with the Australian Tourist Destination focussed exclusively on Australia destination traffic, as does Air New Zealand with Tourism NZ. A triangulating route network would provide the opportunity for the joint promotion of a 'third market' (the dual Australia–New Zealand market).

The Alliance may also provide opportunities for savings through joint media purchasing. Experience in other arrangements suggests that such savings may be limited and that any leverage of buying power for lower media rates on behalf of another partner occurs only in the case of joint advertising.

An examination was undertaken of existing marketing activities undertaken by the airlines. This analysis suggested that the diversion of existing marketing activity focused primarily on market share issues would improve the effectiveness of existing promotional efforts by around 5%. Adjusting for the promotion efficiency improvements discussed above would generate an overall promotion effectiveness increase of about 10%. We consider it reasonable to proceed on the basis that promotion effectiveness would increase by 10 per cent for New Zealand, as the new marketing activities would be more focused on New Zealand, and five per cent for Australia.

To determine the effect of such improvements on tourist arrivals an analysis was undertaken of the factors affecting passenger numbers on Air New Zealand flights. Several factors were considered including the amount of promotion undertaken by Air New Zealand. The results are summarised in Box 1 below. An elasticity of RPK's on Air New Zealand with respect to promotion of 0.13 and 0.17 was found for promotion in the Australian and North American markets respectively.

These elasticities are of similar magnitude to those found by Crouch et al. (1992) [172]. They found an elasticity of tourist arrivals in Australia with respect to promotion in the US of 0.11. The same elasticity for promotion of the Australian market in the Federal Republic of Germany was 0.23.

The econometric estimates of the effect of promotion expenditure on revenue passenger kilometres travelled can be used in conjunction with the estimates of the Alliance-induced increase in promotion effectiveness to estimate the increase in tourist numbers that will flow from increased promotion effectiveness.

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172 Crouch, G.I., Schultz, Lance & Valerio, Peter, 'Marketing international tourism to Australia, a regression analysis', Tourism Management, June 1992.

Box 1: Airline demand equations

Air New Zealand data on monthly tourism kilometres travelled on Air New Zealand routes over the time frame July 1997 to June 2002 is used to estimate a long-run model of demand for travel to New Zealand. The following model was estimated:

$$\ln K_{it} = \varphi 0_i + \varphi 1_i \ln EX_{it} + \varphi 2_i \ln INC_{it} + \varphi 3_i \ln PromTAS_t + \varphi 4_i\, Sep11 + v_{it}$$

where K_{it} is the number of kilometres travelled over the Tasman route by passengers who purchased their ticket from country i, EX_{it} is the bilateral exchange rate between country i and New Zealand (an increase in EX_{it} implies that country i's currency is weaker against the NZ dollar), INC_{it} is the real GDP of country i, $PromTAS_t$ is the promotion of the Tasman route by Air New Zealand and *Sep*11 is a variable that is defined as 0 prior to September 2001 and 1 thereafter and ln is the natural log.

The estimates of the coefficients of this equation for the major Tasman routes are presented in the table below.

Trend Equation for a New Zealand Passenger Demand[a]

Variables	Australia	North America	Japan/Asia
EX	-1.8348 (0.00)	-0.22482 (0.07)	-0.6428 (0.00)
INC	2.8438 (0.00)	-	-
PromTAS	0.13504 (0.01)	0.17345 (0.03)	-
Sep11	-0.33375 (0.00)	-0.17048 (0.00)	-
Trade	-	0.41795 (0.09)	4.772 (0.00)
NZCPI			-2.8507 (0.02)
	R^2 = 0.90, ADF(0) = -4.172 (-4.312)[b]	R^2 = 0.44, ADF(0) = -6.578 (-4.312)[b]	R^2 = 0.72, ADF(3) = -4.58 (-)[b]

[a] p-value in parentheses. These are obtained from Newey -West (1987) adjusted standard errors.
[b] ADF(k) = Augmented Dickey Fuller statistic defined at lag length k with Mackinnon (1993) 10% critical value in parentheses. The ADF test statistic is on the borderline of a rejecting and accepting a trend relationship. The graph of the cointegrating residuals, however clearly shows that the residuals revert to a fixed mean.

For example, if we use the weighted average elasticity of revenue passenger kilometres with respect to promotion of 0.17 and assume the average trip length does not change, then it can be calculated that a 10% improvement in promotion effectiveness would increase tourist arrivals by 1.7%. A 5% increase in promotion effectiveness would increase tourist arrivals by 0.85%.

Given approximately 1.0 million and 2.7 million tourists annually visit New Zealand and Australia, the increase in promotion effectiveness would increase tourist arrivals in New Zealand and Australia each year by about 16,800 and 23,186 respectively per annum. Excluding travellers from Australasia gave a net tourism effect of 13,300 and 20,400 for New Zealand and Australia respectively.

In addition to these effects, the Alliance may impact on promotion expenditure by the parties. These effects are considered in the following section.

Impact of activity on promotion

The Alliance will make it possible for the parties to develop a range of fares and more generally, packages, aimed at dual-destination travellers. The quality of services will also rise which will also open up marketing opportunities that can be profitably exploited. In addition the profitability of the parties operations will increase significantly under the Alliance. The sorts of effects will increase both the opportunities for promotion as well as the return from promotion. Consequently the Alliance will generate substantial opportunities for increased promotion that would increase tourism.

Air New Zealand, for example, has recently informed the New Zealand Treasury that it would increase inbound promotional expenditure by 10 per cent under the Alliance.

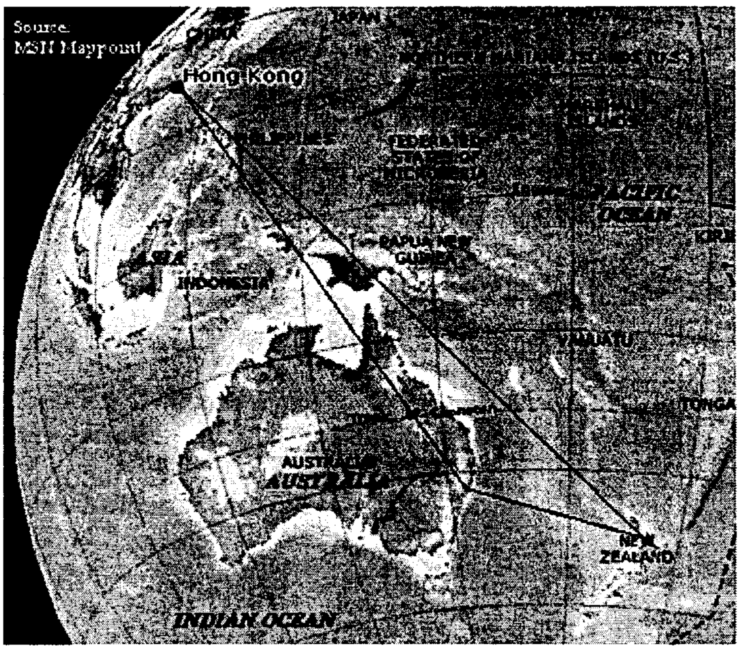
It is difficult to estimate the impact of the Alliance on the level of promotion as past relationships between promotion drivers and promotion levels are likely to significantly alter under the Alliance. Thus while noting Air New Zealand's commitment to expand promotion under the Alliance no specific increase in promotional spend, other than that associated with QH initiatives, has been modelled in this analysis. Thus the estimates of the additional tourists that would be generated by the Alliance are very conservative.

5.3.3 Tourism impacts from new flights and new fares

Under the current market structure there are limitations on the extent to which tourists travelling to this region can optimise their travel arrangements. For example, because it is not possible for Qantas to fly directly between New Zealand and North Asia, tourists from that region who are travelling on Qantas and visiting both Australia and New Zealand need to cross the Tasman twice. Under the Alliance Air New Zealand's rights could be used to form a more efficient triangular journey.

An example of this flight-scheduling differential is illustrated in Figure 2 below. Currently tourists from Hong Kong wishing to take a holiday flying Qantas to Sydney, then on to Auckland, and finally back to Hong Kong would have to do so using a Hong Kong-Sydney-Auckland flight plan (the black lines) for both legs of the journey. Under the Alliance however the return flight can be made direct from Auckland to Hong Kong (the blue lines). This example is purely illustrative: a similar effect occurs on flights between this region and other tourist origins, with the most significant being China, Hong Kong, Japan, Taiwan and Korea.

Figure 2: Illustration of flight-scheduling benefits



The benefit delivered by the Alliance comes from two sources: the absolute increase in tourism directly resulting from the decreased travel time and complexity, as well as the enhanced access to flights via scheduling and capacity increases; and the increase in utility for those tourists who would have made the trip anyway but now do not have to bear the time cost of inefficient international flight routing. In the short-run, only the first of these is relevant to the public benefits accruing to Australasia. Over the longer-term however, it seems likely that there would be some feedback from greater tourist satisfaction to greater tourist numbers, so initial impacts are likely to understate the long-term benefit.

These effects can be analysed using Quantitative Service Index Analysis ('QSI' analysis). This is a methodology widely used in the airline industry to forecast passenger flows and profitability. Among the airlines using the methodology are United Airlines and American Airlines. The index aims to use airlines frequency and capacity to measure the 'quality ' of service between two points.

Using typical QSI values the impact of improved quality of an alliance-generated improvement in quality of service on the Auckland – Adelaide route was evaluated. Currently passengers travelling each way, per day, between the two cities are about 60 persons. The QSI analysis indicated that the proposed schedules for this route would increase the QSI index by over 200 per cent. Driving the increase in quality of service is the Air New Zealand direct services, and increased connectivity via Sydney, Melbourne and Brisbane due to increased Trans Tasman frequency.

The QSI increase can be converted into an estimate of the service quality induced increase in passengers by multiplying the percentage increase in QSI by the elasticity of passenger numbers with respect to QSI. This elasticity is usually around 0.3. On the route evaluated an indicative increase in passenger numbers of around 90 per cent was indicated.

This analysis is purely illustrative but it serves to demonstrate the importance of improved quality of service on travel. However, it was not possible to undertake a complete analysis of service quality improvements under the alliance. As service quality will increase significantly under the Alliance, the tourist impacts of new fares and products under the Alliance are very conservative as they only capture the effects of capacity changes and fare changes on tourist arrivals and neglect the impact of improved service.

The impact of capacity changes and fare changes on tourist arrivals were estimated as follows.

1. We took as the starting point, the changes in passenger numbers on each route as predicted by our model of competition.

2. We then used historic data on tourist departures and arrivals between New Zealand and the countries of interest (i.e. those which experience capacity increases under the proposed schedule) to estimate the passenger split on any given flight between New Zealanders and residents of the country of interest.

3. Applying these proportions to the expected passenger changes per route (as obtained in step 1) provided estimates of the expected number of tourists from the country of interest to New Zealand, and from New Zealand to the country of interest. Subtracting the expected New Zealand tourist flows from the expected flows from the country of interest gave the estimated net tourist flows.

4. Finally, Australasian tourists diverted from the international market back to domestic markets, as a result of the Alliance, are added to get the total tourism impact from new fares and capacity changes (Table 23).

Table 23: Net tourist impacts from new fares and products

Year	New Zealand impact	Australia impact	Total impact
1	1,615	–6,469	–4,853
2	1,615	–6,469	–4,853
3	-10,333	–10,771	–21,104
4	–11,027	–10,660	–21,687
5	–11,347	–10,938	–22,285

A negative impact from new fares and capacity changes is indicated. This is because the modelling estimates fares rises and capacity reductions. Both these effects reduce tourist arrivals. However, it is important to stress that this negative impact is significantly overestimated, as the impact of improved quality of service is not incorporated into the numbers.

5.3.4 Total net tourist impact

The total impact on tourism from the effects considered is given in Table 24. In year 3 of the Alliance, an additional 53,000 tourists and 28,000 tourists are estimated for New Zealand and Australia respectively.

Table 24: Estimated net impact on tourism of the Alliance, year 3 (persons)

	Qantas Holidays	Increased promotion effectiveness	New fares and products	Total
New Zealand	50,000	13,277	–10,333	52,944
Australia	18,000	20,383	-10,771	27,612

The estimates of the additional tourists generated by the Alliance are sensitive to the assumptions made regarding the effectiveness of promotion and the magnitude of the promotion elasticities