Report on the Competitive Effects and Public Benefits Arising from the Proposed Alliance between Qantas and Air New Zealand

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Executive Summary

This report sets out an economic analysis of a proposed alliance between Air New Zealand and Qantas. The proposed alliance involves Air New Zealand and Qantas entering into a Strategic Alliance Agreement (the "Alliance"), which will regulate their respective airline operations on all routes operated by Air New Zealand and those operated by Qantas to, from and within New Zealand. As a condition of the Alliance, Qantas will acquire up to a 22½% shareholding in Air New Zealand.

The crucial issue for competition policy authorities in both Australia and New Zealand in respect of the Alliance is whether it yields net benefits to each country – that is, whether the benefits the Alliance brings outweigh any detriments it is likely to cause. This is the essence of the test for authorisation, for which the parties are applying, as set out under the Australian **Trade Practices Act, 1974** and the New Zealand **Commerce Act, 1986**. This report sets out the reasons why the Alliance meets that test. This Executive Summary summarises those reasons and presents the main results of the analysis contained in our full report.

In summarising these reasons, we start by setting out the wider context in which the Alliance occurs – that is, by analysing the commercial logic underpinning the Alliance. To understand this logic, it is important to understand the changing environment for international aviation, and its implications for the parties. This is consequently the focus of the first section of this Executive Summary.

While the commercial logic underpinning the Alliance is essential to any proper evaluation of its effects, the authorisation test does not look at matters from the standpoint of the parties. Rather, it asks whether society as a whole is better off in the future with the Alliance than it would be in the future were the Alliance not to proceed. In the second section of this Executive Summary we therefore identify and wherever possible quantify the benefits and costs that the Alliance would give rise to. We show that the Alliance will help secure for both Australia and New Zealand the benefits of an efficient, internationally competitive aviation industry; and that these benefits substantially outweigh the Alliance's potential social costs.

A third, final section concludes.

The commercial context

In 2001, the world's major airlines incurred losses of some US$18 billion, measured in terms of operating profits before interest and tax. Since then, despite some recovery in traffic, losses have continued to mount, increasing debt levels and pushing some of the industry's largest firms to the verge of collapse. Faced with the real possibility of further serious disruption to the industry, stock markets have dramatically written down the value of aviation as a whole. This, in turn, makes it ever more difficult for airlines to finance needed investments, so that immediate problems risk becoming on-going structural weaknesses.

The dangers this environment poses inevitably weigh heavily on firms' decision-making. But serious and immediate as these risks are, there are also long term opportunities in aviation that remain substantial and will increase further in the years to come. Over the longer run, a more integrated world economy, achieving and maintaining high income levels, will encourage sustained demand for air travel, both for passengers and for freight. So long as airlines can find a viable business model – that allows needed investment to be funded – the world aviation industry ought to be well capable of offering extensive, safe and affordable service to its customers, reasonable returns to shareholders, highly skilled and secure jobs to its employees, and to the community as a whole, the gains that come from efficient domestic and international transport.

Preserving and realising these opportunities is a challenge for countries and carriers world-wide. That challenge is of special relevance, however, to our part of the world. Geographically, Australia and New Zealand are 'at the end of the line.' For example, Australia and New Zealand are four times as remote as the UK and Germany and twice as remote as the US and Hong Kong, where remoteness is measured by the weighted average distance of a country from its 10 major trading partners. An internationally competitive aviation industry, with a strong attachment to serving both countries, is indispensable if the Australian and New Zealand economies are to prosper.

Indeed, there are many opportunities the Australian and New Zealand economies can **only** secure if the aviation industry is placed on a sound footing. Central among these is tourism. Over the last decade, the tourism industry has become one of the largest sectors both in the New Zealand economy and in Australia's. In 2002, the travel and tourism industry accounted for 5.3% of GDP in Australia and 6.6% of GDP in New Zealand. The contribution travel and tourism makes to our economies is already substantially greater than that in other advanced economies, and has scope to increase further. Especially in Asia, rising income levels over the next decade will be reflected in growing tourism outlays. At the same time, in the OECD countries, demand for ecologically oriented tourism is likely to rise, putting a premium on destinations that are less spoiled than most by industrial development. Australia and New Zealand are especially well-placed to benefit from these trends.

For this potential to be realised, the airline industry must continue to play a leading role in actively promoting Australia and New Zealand as tourist destinations. Additionally and crucially, the industry must develop new services, capable of attracting repeat tourists, as the pool of potential first-time visitors becomes too small to sustain the scale of our tourism infrastructure. More flexible fares, that offer greater opportunities for 'dual destination' visitors to see the best of both Australia and New Zealand, are one important element in this regard.

Just as the continued prosperity of our tourism industries depends on aviation so too, and increasingly, will the movement of goods. In recent years, both Australia and New Zealand have developed substantial industries that rely on air freight. These industries can and should continue grow as rising incomes internationally increase the demand for high value perishables, and for other goods with high ratios of value to weight. Without efficient, reliable air transport – be it in dedicated freighters or in the belly of passenger planes – this growth opportunity too will be lost.

Both Australia and New Zealand therefore have a compelling public interest in efficient air transport. Precisely for this reason, both countries have been among the world leaders in liberalising aviation and exposing it to the full constraints of market forces. Aviation markets in Australia and New Zealand are now among the most lightly regulated in the world, and constraints on entry and competition have been largely removed.

There is a marked contrast here with many countries in the region, which retain a wide range of *de jure* or *de facto* constraints on the operation of market forces. Carriers from these countries do not really need to adjust to commercial realities – and in some cases show few signs of doing so. However, this is not a luxury carriers from Australia or New Zealand have. That this is ultimately a source of strength hardly needs saying; but it also means that if things go wrong, the 'end game' can be rapid and the consequences severe – as the collapse of Ansett so dramatically showed.

Securing the future of aviation in Australia and New Zealand should therefore be a crucial concern of policy-makers in both countries. In the immediate future, this requires ensuring that carriers in both countries can withstand the pressures of a volatile and in many respects extremely threatening international environment. But it is not a short term 'fix' that is required; rather, what is needed is to allow an industry structure to emerge that responds to the longer term changes that are reshaping aviation worldwide. It is against the backdrop of these longer term changes that the Alliance and its impacts need to be viewed.

The longer term trends

The single most important long term factor altering the structure of aviation markets internationally is liberalisation. As previously highly regulated markets have been opened to

competition, airlines have been forced to develop more efficient ways of providing service, both domestically and internationally. Consumers have benefited greatly, as fares have been reduced and the range of services on offer expanded.

Great as these consumer gains have been, there is little doubt that adjusting to a more competitive environment has placed very substantial pressure on airlines, and most notably on incumbent Full Service Airlines ("**FSAs**"), also often referred to as **Network Carriers** – that is, carriers such as Qantas and, historically, Air New Zealand that operate a network service, based on inter-connectivity across a wide range of routes, and seeking to provide the full range of service traditionally associated with passenger air travel. Two factors dominate the picture in this respect.

Globalisation and the rise of alliances

To begin with, wider changes in the industrial economies – most notably, ever closer international economic and social integration – have created a rising demand among consumers for wide reach: for airlines that can provide essentially seamless travel on a global basis. At the same time, liberalisation has made it possible for airlines to respond to this trend, albeit within the confines of regulatory arrangements that continue to impede full industry rationalisation.

A key element here has been the development of international marketing alliances. These allow network carriers, individually and through the alliances themselves, to compete by offering customers a greater degree of connectivity and interlining than has ever been available in the past. Groupings such as Star and **one**world have thus made it possible for participating airlines to extend the scope of their services well beyond what regulatory and commercial barriers would otherwise permit.

Valuable though they are, these marketing-oriented groupings nonetheless fall well short of securing the full efficiencies that can come from integrated operation and indeed themselves impose substantial transactions costs. Although they may be the best that can be achieved in markets where restrictions on foreign ownership and control remain substantial – so that full cross-border mergers cannot occur – such loose groupings are ultimately a second best solution that is not sufficient to meet airlines' needs as competition becomes ever more intense. They can and do allow more seamless ticketing and travel to be made available; but they do not provide a framework in which cost efficiencies can be achieved, joint investments planned and executed, and new product development effectively coordinated.

It is consequently unsurprising that more recently, a substantial movement has occurred worldwide to closer links between airlines, based on equity participation and fuller integration of operations – with the recent turmoil in the industry adding impetus to this trend towards

'integrated alliances'. In 2002 alone, 7 international alliances have been granted regulatory approval or re-approval.[1]

These integrated alliances provide for coordination far beyond that secured within the marketing groupings. This was noted by the ACCC in its determination regarding the Restated Joint Services Agreement between Qantas and British Airways ("RJSA determination"), where it contrasted integrated alliances from marketing alliances in the following terms:[2]

> Integrated alliances … typically involve a high degree of integration of the airlines concerned, including coordination of fares, schedules, service levels and yield and capacity management… integrated alliances contemplate that the alliance carriers operate as a single competitive entity across part or all of their networks.
>
> Marketing alliances offer the consumer the benefits of broader networks, more seamless travel and expanded loyalty programs. However the alliance airlines generally continue to offer their fares, schedules and services independently, and airlines within the same marketing alliance may compete with each other if on the same route.

In addition to the types of coordination identified by the ACCC, integrated alliances may also involve joint purchasing of fuel, catering services, and possibly aircraft, as well as rationalisation of ground handling services. By all of these means, the scope to secure efficiencies is enhanced well beyond that offered by looser groupings.

Whether these efficiencies are indeed obtained also depends on ensuring that each of the parties involved in an integrated alliance has incentives to act in ways that maximise benefits to the integrated alliance as a whole. Equity participation plays an important role here, as it provides the investing airline with a direct interest in the residual income of the airline it is investing in. This

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[1] Delta–Air France–Alitalia–Czech Airlines, American Airlines–Finnair, Lufthansa–Austrian Airlines, Delta–Korean Airlines, United-–British Midland, Northwest–KLM, United–Lufthansa–SAS.

[2] See ACCC, 2000, *Application for Authorisation: Joint Services Agreement between Qantas Airways Limited and British Airways Plc*, 10 May. Authorisation No: A30202, File No: C1999/767 ("RJSA determination"), p. 27.

creates greater and more effective incentives for joint optimisation, for example of scheduling and aircraft selection, as the gains accrue to both parties.

The emerging pattern, therefore, is one in which integrated alliances, generally involving equity participation and full coordination of operations, are emerging in parallel to the looser marketing alliances. Over the longer term, it is these integrated alliances that define the basis for global competition among airlines; for network carriers, participation in these alliances will play an important role in securing scale and scope economies that continued regulatory restrictions on international mergers would otherwise rule out.

The rise of low cost airlines

The pressure for network carriers to secure these scale and scope economies, and more generally to achieve far higher levels of efficiency in their operations, has been greatly increased by a second trend – the rise of low cost airlines. More specifically, network carriers now face a threat that was under-appreciated, if not substantially overlooked, only a few years ago: namely, the emergence of aggressive, highly successful, airlines operating on a "value based" model (hence the term "Value Based Airline" or "VBA").

It is true that the initial liberalisation of international service had seen the emergence of discount carriers such as People Express.[3] These first wave entrants, however, were not able to establish viable operations, partly because of management weaknesses but also because the systems needed for low-cost service were not yet available. They therefore seemed to pose little durable threat to long-established incumbents. By the mid-1990s, however, the situation had changed dramatically. SouthWest Airlines in the US demonstrated the viability of a business model based on high frequency direct flights using a very limited set of aircraft types, with a single, rather basic class of service, no or extremely little interlining, a strong regional focus (at least initially) and very low marketing, ticketing and revenue management costs. Imitators rapidly followed and made major inroads into airline markets in virtually all the jurisdictions where airline service is open to competitive entry.

[3] People Express was one of many airlines that entered following the deregulation of the United States airline industry, offering no frills flights at very low prices. Excessive borrowing and overexpansion contributed to its demise.

VBAs come in many different shapes and sizes. They evolve as they grow, and the management models and route networks they adopt to handle greater traffic volumes and market shares differ significantly. Even so, it is perhaps the most important feature of low cost carriers that they do not seek to provide full network interconnectivity; this allows them to avoid the complexities and high costs inter-lining imposes in terms of ticketing and revenue management, scheduling and flight operations. The result is that they provide a very focussed form of competition that is especially able to offer low fares to travellers with essentially point-to-point travel needs.

Experience shows that the competitive effects of low cost airlines are far greater than the extent of their market share gains would suggest. The Australian experience, in which Ansett, a carrier with over 50 years of operation, a strong brand and an extensive and loyal customer base, was driven into administration, is telling in this respect.[4] So too are the results of economic analysis, surveyed in section 2.1.3, which show that competition between a VBA and a FSA leads to fares significantly below those that result from competition between two or more FSAs.

These competitive effects are not confined to the routes directly served by low cost airlines. Evidence from the impact of Virgin Blue's entry into Australia, also discussed in section 2.1.3, shows that fares have declined even in areas where entry has not yet occurred. Consistent with experience in other jurisdictions, the fact that Virgin Blue has entered on some routes, and forced fares down on those routes directly, has had significant spill-over effects in the domestic market as a whole. This is not merely because the threat of entry acts as a constraint on pricing on those routes not yet served by the low-cost airline; it is also because the low-cost airline redefines passenger expectations of fare levels (most visibly through fares set, even if only temporarily, at extremely low levels), and makes it more difficult for incumbent airlines to stimulate or maintain traffic at traditional price points.

The competitive success of VBAs reflects, to at least some extent, the fact that especially on short haul flights, many airline customers prefer reductions in fares to what are only marginally higher levels of service. The recent strategy undertaken by Air New Zealand to operate as a VBA+ domestically within New Zealand is testament to the credibility FSAs place on this message that emerges from experience with value-based competition internationally. Having said that, experience internationally highlights the difficulties full service operators have in converting

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4 After over 60 years of operation, Ansett ceased flying in early March 2002. See ABC Online, 2002, 'Emotional end to Ansett's demise', *Lateline* transcript, 4 March, http://www.abc.net.au/lateline/s496184.htm.

themselves to the VBA model, and hence the vulnerability of even the newly-adopted Air New Zealand model to displacement by a value-based alternative.

The challenge in summary

Looking to the longer term, network carriers therefore face a dual challenge:

- International trends give great competitive significance to attaining the scale and reach needed to remain among the world's leading airlines, and thus secure access to worldwide networks on favourable terms. Although scale and wide reach brings benefits, it also entails substantial costs – for example, in the systems and processes needed to make complex connectivity possible.

- At the same time, however, any excess costs can and in time must create an exposure to displacement by low-cost, essentially short-haul, point-to-point airlines – with the demise of Ansett demonstrating just how vulnerable even well established brand names, with extensive frequent flyer programmes, can be.

The immediate pressures of a volatile and threatening international environment only make the difficulties and urgency this dual challenge involves all the greater.

Implications for the parties

There can be little doubt that these challenges, which define the commercial context for the Alliance, are especially acute for Air New Zealand. The reality is that since the 1990s, Air New Zealand has rarely even been able to cover the opportunity cost of the capital invested in it. Since 1997, its realised rate of return has been substantially below its Weighted Average Cost of Capital. Even excluding the impact of the Ansett acquisition, since 1997, investors in Air New Zealand have accumulated a loss, in economic terms, of some NZ$560 million at today's prices. As these losses occurred, a wide range of shareholders have invested and then withdrawn. At the same time, the strategies adopted to turn the situation around have failed to provide Air New Zealand with a viable, much less secure, base – the acquisition of Ansett being the most spectacular case in point.

This is not to say that we believe that Air New Zealand faces near term disappearance absent the Alliance. Air New Zealand now has a strong and committed shareholder in the New Zealand Government. It also has the advantage of a loyal customer base, a deep knowledge of and presence in domestic New Zealand, and greater connectivity, particularly at Auckland, than could

readily be obtained by a competitor. Given these advantages, it is our view that Air New Zealand could continue to operate, at least for some time, were the current structure to persist.

That said, we believe it is crucial to appreciate the constraints that bear on Air New Zealand. Three are especially important.

The first is scale. Although New Zealand is not insubstantial as a base for operations, it is small in international terms. For a carrier that needs to operate on extremely long routes, covering a very wide geographical area, New Zealand's small size as an economy, combined with its location, makes it extremely difficult to secure efficient capital utilisation. Related and importantly, the small scale and dispersed route structure mean that expansions in output impose major strains in terms of capital requirements, with Air New Zealand having a structurally high incremental capital output ratio.[5] As a result, it is difficult, if not impossible, for Air New Zealand to grow out of its difficulties – as the experience of the 1990s made clear.

Second, Air New Zealand's domestic revenue base – both for its operations within New Zealand and for its international network – has been affected by relatively low long term economic growth. More recently, there have also been changes in New Zealand's socio-demographic characteristics that adversely affect Air New Zealand's revenue base, most particularly, a shift from large businesses as the primary source of business travel to highly price-sensitive smaller firms and at the same time, a shift in the leisure travel market to more price-sensitive segments such as retirees. These changes have imposed significant constraints on Air New Zealand's income potential and, more generally, kept its margins low. This has accentuated the effects of small scale, as it has meant that incremental output has not been highly profitable: expansion is consequently not self-financing but rather imposes added burdens on the airline's providers of capital, further limiting the scope to grow out of structural problems.

Last but not least, the New Zealand market-place is far from being a sinecure. In its **international** network, Air New Zealand faces sustained competitive pressure from a wide range of airlines. Some of these operate on an essentially non-commercial basis, with access to capital underwritten by national governments – Malaysian Airlines (whose debt has essentially been written off by the Government) being a case in point. Even putting subsidies aside, for many Asian airlines, the segment to New Zealand is an add-on, that can be and is priced at marginal cost to use aircraft

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5 The incremental capital output ratio ("**ICOR**") measures the percentage change in assets required to sustainably increase output.

that would otherwise sit on the ground in Australia prior to their return flight to an Asian hub. The difficulties this creates for Air New Zealand are heightened by its lack of beyond rights through Asia to Europe, which prevents it from accessing what is now the major direction of travel between Europe and our part of the world. Overall, the profitability of Air New Zealand's long haul network, which accounts for a substantial share of its costs, is thereby seriously constrained.

The **domestic** situation is also marked by serious competitive challenge. The fact of the matter is that domestic New Zealand has never been sufficient to support two network carriers. Over the last decade, competition between network carriers has invariably resulted in serious losses being incurred, and ultimately, in the disappearance of the weaker player. For the reasons noted above – the loyalty of its customer base, its deep knowledge of the local market-place, the greater extent of its international connections – Air New Zealand has been and in some respects remains relatively well-placed to meet each of the successive challengers; but its current contest with Qantas is nonetheless one which could impose very severe strains on its sustainability and growth prospects.

Although New Zealand aviation outlays are relatively small, a New Zealand presence is of considerable significance to Qantas, not only given its geographic proximity, but also in terms of securing economies of network reach and as a means of strengthening its ability to compete relative to current or potential 'mega-carriers' from other parts of the world. Over the long run, Qantas needs a presence in New Zealand not so much because of the direct revenue potential in New Zealand, but as a part of its wider network – as a way of achieving the efficiencies that can come from interconnecting the routes within, to and from New Zealand into its wider system.

This fact – that Qantas' presence in New Zealand forms part of the commercial logic underpinning its overall network – has two significant implications. The first is that Qantas will have a greater degree of commitment to its presence in New Zealand than did Air New Zealand's previous challengers. Second, and perhaps even more important, it means that Qantas, if it is to meet its objectives in New Zealand, must operate in New Zealand as a network carrier – that is, a carrier that provides full interconnectivity within its operations, as well as the other services necessary to attract high yield traffic. For this strategy to be successful, Qantas' New Zealand operations must appeal not only to the leisure segment, but also to the business traveller. This does not only imply offering lounges and frequent flyer programs, but also and perhaps most importantly, providing a relatively high level of flight frequency on the main trunk routes.

Given this, there is, in our view, little doubt that Qantas will continue to expand its frequencies domestically, so as to approach a closer to 50/50 capacity split with Air New Zealand, while at least matching Air New Zealand's capacity on the Tasman.

More specifically, based on planning information confidential to each party, we believe that absent the Alliance, Qantas will substantially increase its capacity both in domestic New Zealand and across the Tasman (combined by nearly 30% relative to current capacity)[6]. We would expect Air New Zealand to also increase the capacity it deployed (on the Tasman and domestic New Zealand combined of 5%), as it could not afford to be accommodating on these routes which account for so large a share of its operations. The result would be to significantly increase costs, reduce load factors and/or yields and cut profits. Air New Zealand would remain cash positive, but absent continued underwriting by the New Zealand government (which would come at the expense of other uses of public funds), its long term financial position would not be such as to allow major investments to be financed on an economic basis.

The modelling we have done suggests that the risks inherent in this situation are very substantial. In domestic New Zealand, with an even split of capacity between the airlines, Air New Zealand will have a slightly higher share of revenues and passengers, reflecting the greater connectivity it can provide out of Auckland and some customer loyalty. Even so, the likely increase in Qantas capacity will significantly reduce the contribution Air New Zealand secures from its domestic operations, placing further pressure on the airline's already strained profitability.

As for the Tasman, given capacity costs and load factors, prices are already too low to allow an economic rate of return to be earned. Based on the financial accounts of each airline for the year to June 2001, the Tasman operations of both Qantas and Air New Zealand were unprofitable. For the year to June 2002, Air New Zealand continued to operate unprofitably on the Tasman, while Qantas achieved a small accounting profit before tax equal to 2% of total revenue. Here, with an even split of capacity, it is Qantas that will attract the higher revenue share, as its domestic base supports higher fares and attracts somewhat more feeder traffic than does Air New Zealand's. As capacity expands, a high share of the incremental losses will likely be borne by Air New Zealand.

The contributions Air New Zealand can secure from its domestic and Tasman operations are therefore uncertain at best, while to date, the long haul operations have not been able to cover their economic costs.

Obviously, this does not mean that Air New Zealand lacks strategic options. It is clear that, to date, it has deployed a range of strategies aimed at improving its competitiveness. Some have not

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6 This is the percentage change, on an ASK basis, between current capacity and capacity in year 3 of the Alliance.

worked – the Ansett debacle being the most obvious of those. Others, such as the recent move to a VBA+ operation within New Zealand, are considered promising. However, these strategies do not and cannot fully address the underlying problems – that is, the broad structural forces primarily associated with the small scale of its market and New Zealand's geographical position. These make it difficult for the airline, as a network operator, to attain the scale and scope economies that could reduce its vulnerability and allow it to more fully achieve long term expansion opportunities.

What then are the options open to Air New Zealand? One possibility is that of converting Air New Zealand as a whole into a VBA. We do not believe this strategy to be credible. Air New Zealand is fundamentally a network carrier. For its long haul operations to be viable, they must be based on interconnectivity with its domestic network, and be able to draw on a customer base that includes the higher yield segments. Conversion into a VBA would prevent this, and hence would force Air New Zealand's withdrawal from long haul operations. It may or may not be that Air New Zealand could survive on this basis; but it certainly would not provide the kinds of benefits to New Zealand – in terms of tourism, freight and connectivity with the wider world – that impelled the Government's decision to devote to Air New Zealand's survival scarce public funds.

Another possibility would be that of seeking an alliance with some carrier other than Qantas. We note that this possibility has been explored, and not been found to be viable. This is not surprising, when account is taken of the position of the obvious candidates: United (which at the time of writing is on the verge of bankruptcy) is hardly well placed to consider underwriting substantial losses going forward; while Singapore Airlines has had little difficulty in increasing its market share despite the loss of Ansett, and has no interest in bearing the costs involved in the Tasman and domestic New Zealand routes that are of marginal significance to its global strategy. As a result, we see no reason why any such option would exist as a matter of commercial reality – and even less so, why it would be attractive.

In contrast, the proposed Alliance can address the structural issues that have impeded Air New Zealand's growth in the past. It is obvious that the Alliance will make Air New Zealand far less vulnerable than it now is. But even more importantly, through the coordination of the parties' New Zealand operations, the airline will be able to achieve significant cost savings and improve its capital efficiency, hence making it substantially easier for it to grow over the longer term.

Qantas' position is plainly different from that of Air New Zealand. Qantas is currently one of the world's most profitable airlines. In part, this reflects the strength of the Australian economy, and to that extent Qantas is vulnerable to the economic conjuncture. It also reflects the strong market position that Qantas acquired following the collapse of Ansett. Looking to the future, that position will be weakened as Virgin Blue develops, and possibly as further entry into the Australian

markets for domestic and international airline travel occurs. Having said that, it is clearly the case that Qantas, at least at present, seems well placed to tackle the challenges ahead.

This has obvious implications for a continued, and indeed possibly even intensified, contest between Qantas and Air New Zealand. Qantas would go into such a contest in a position of strength. Given this, it may seem that the Alliance provides no real advantage to Qantas that it could not eventually obtain even if the Alliance did not proceed.

The fact of the matter, however, is that in any such contest Qantas has much to lose. Despite its current strength, Qantas faces a substantial, steadily growing, challenge from an aggressive low cost carrier in its home market. To meet that challenge, it must reduce costs further and secure efficiency improvements wherever it can. The risk of further severe disruptions to global aviation, related to international terrorism and the world political situation, makes it all the more important that opportunities to increase efficiency be exploited quickly and fully. After all, recent years have shown how carriers that seemed strong and highly profitable – such as United and British Airways merely three years ago – can find their position drastically weakened in a very short space of time. When this happens, the restructuring they engage involves substantially reducing capacity and reach (as both United and BA have done in recent years), compromising long-term competitiveness.

Seen in terms of these imperatives, a prolonged war of attrition with Air New Zealand would potentially be very costly. Substantial economic waste would be incurred as the inefficient use of capacity was prolonged and intensified. Waste on this scale would make Qantas less rather than more competitive over the longer run. In contrast, securing a close alliance now with Air New Zealand would help Qantas reduce costs and allow the development of a wide range of new fares and services, including new direct routes between Australia and New Zealand. Importantly, it would also provide valuable additional traffic for Qantas' hub in Singapore, increasing the viability of direct Qantas flights to Rome, Paris and Frankfurt – flights which are now very marginal indeed. Over the longer term, the greater passenger volumes could support new direct routes internationally, for example to the United States and South America. The overall effect would be to increase the long term prospects for a successful global operation that brings together two very strong brands based in this region of the world.

In short, though Air New Zealand and Qantas are differently placed, the opportunity associated with the Alliance is substantial for both parties. In considering the importance of this opportunity, it is fair to ask whether it would not remain, say until stronger competition to the two carriers had emerged in the various markets in which they operate. In other words, is it not reasonable to wait until greater competition has developed before proceeding with the Alliance as proposed?

It may indeed be possible to wait. But postponing the transaction would mean incurring costs in the present that could be avoided, while the entity that eventually emerged could be materially weaker than the two parties now are. The scope to bring together two strong, internationally recognised, brands would be compromised if not foregone, and with it, the ability to use a combined base on the two sides of the Tasman as a long term asset in an ever more integrated global aviation industry.

In particular, there must be a significant risk that there would be relatively little value left in Air New Zealand, and hence less scope for the New Zealand shareholder – effectively, the New Zealand community – to secure terms in any future arrangement that ensured the fullest benefit to New Zealand. Put in the language of financial markets, Air New Zealand, and the New Zealand community generally, holds an option now – to secure an arrangement that underpins the longer term sustainability of the national flag carrier – that may well expire in future and in any event will be worth less than it is today. While the risk of this option expiring will obviously be reflected in the terms on which any arrangement can be struck in the present, far fewer benefits might be available to New Zealand if a transaction of this kind was being considered at a time when further substantial weakening of the national carrier had occurred.

New Zealand would therefore face the prospect of seeking to compete in a globalised world economy without a strong nationally-based airline. At the same time, advantages that could have been secured for both airlines and economies now would be placed at substantial risk, and quite possibly lost.

The basis for the Alliance

In contrast, proceeding with the Alliance would allow the parties to secure a competitive future in the face of continuing and profound changes in industry structure.

A key feature of the Alliance is that it will allow the parties to achieve very substantial cost efficiencies. As we show at section 5.1, by the third year of the Alliance the parties combined are estimated to reduce costs by $323 million annually compared to the level of costs they would incur in the absence of the Alliance. These efficiencies are both a real saving from the point of view of the community as a whole and are crucial to allowing the parties to face emerging competition from lower cost operations. At the same time, by combining their planning, the parties will be able to improve their scheduling and route planning, thus again enhancing their ability to remain competitive both in their full service operations and in the operations they undertake as a VBA+.

In addition to these efficiencies, the Alliance will make it possible for the parties to offer a fully integrated operation covering Australia and New Zealand. This first of all strengthens their

domestic base, and allows them to more effectively supply travel both within that base and from that base to the rest of the world. It also increases their ability to develop packages and more generally service offerings that make travel to this part of the world attractive from places in other regions. Further, by having a fully integrated home base, spanning both sides of the Tasman, and with an enhanced capacity to market that base overseas, the parties will be less vulnerable to the shifting fortunes of international alliances and more confident of being able to participate in these alliances on terms that provide them with the greatest advantage. Last but not least, the wider reach of the Alliance will make each carrier less vulnerable to the immediate threats the industry faces, and therefore better able to fund the long term investments that participating in global aviation markets requires.

The Alliance therefore addresses both of the parties' key requirements: to secure and maintain substantially higher levels of operating efficiency; and to ensure a continued and strengthened ability to act as a fully-fledged participant in an ever more global aviation market.

The Alliance's costs and benefits

There is therefore a compelling commercial logic to the Alliance. But no matter how strong these considerations are from the point of view of the parties, the role of the authorisation process is to consider the Alliance's consequences from the point of view of society as a whole. Fundamental to this assessment is a realisation that competition is not an end but a means – the end being that of ensuring that society can obtain the best use of, and hence greatest value from, the limited resources at its disposal. The question then is whether the Alliance contributes to that end.

We start by summarising some key aspects of our approach to this question, before then setting out the main points of our analysis.

The approach we have adopted

In assessing the impact of the Alliance, we view the key issue as being that of whether the benefits to society as a whole outweigh the costs, without consideration of the distribution within society of those costs and benefits. To put matters colloquially, we are concerned with the size of the pie, rather than with the allocation of its slices among alternative potential claimants.

In assessing the impact on overall efficiency, we have focussed on a comparison of the world as it is likely to develop with the Alliance relative to the world as it is likely to develop without the Alliance. This follows from the fact that the authorisation test does not ask whether the future will be better or worse than the past, but rather, whether the future should authorisation be granted

would be preferable to that which would otherwise occur. We are, therefore, necessarily engaged in the comparison of alternative futures, recognising that a degree of uncertainty must attach to that evaluative process.

This approach of comparing alternative futures, which is at the centre of our quantitative assessment, has the important effect of ensuring that the only net benefits we ascribe to the Alliance are those that otherwise, would not be realised.

This comparison of the world "with" and "without" needs to concern itself with the longer term, that is, with the consequences once there has been sufficient time for adjustment to occur. However, this does not mean that the adjustment process is irrelevant – for in comparing alternative futures, the costs required in each to attain a longer term position can be of considerable importance. Rather, the question is "taking account of what is involved in the adjustment process, and of where that adjustment process will lead, which course of action best advances society's interests overall"?

In short, our analysis has three main features: it concerns itself with the "size of the pie", rather than its distribution; to do so, it examines the future with and without the proposed Alliance, and hence only concerns itself with net benefits that society would not otherwise obtain; and it looks to the impacts in the longer term, without ignoring what is involved in the process of adjustment.

The future with and without the Alliance

The empirical work we have done therefore compares the outcomes likely to eventuate under the Alliance with those that are most likely in the Alliance's absence. (Throughout the report we also refer to the future with the Alliance as the "factual" and the future without the Alliance as the "counterfactual".)[7]

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[7] We note that the New Zealand Minister of Finance, Michael Cullen, has also recognised that considering the world without the Alliance is relevant to an assessment of the Alliance. Speaking in an interview, Mr Cullen stated:

> I ask you the counterfactual question: If we decide to compete head on with Qantas in full competition, why do we assume that Air NZ is going to win that

Our expectations for the world without the Alliance, as summarised above, involve a substantial increase in capacity and hence in unit costs. It is fair to ask whether such an increase is reasonable and whether it could be sustained over the period analysed.

The capacity increase we have modelled is no more than a continuation of the trend as it has played itself out over recent years. For reasons set out above, we believe Qantas's strategy on the Tasman and in New Zealand requires it to be competitive in terms of frequency. This will involve a continuing rise in the capacity it commits to domestic New Zealand and a somewhat smaller, but still continued, increase in capacity on the Tasman. At the same time, we do not believe that Air New Zealand can afford to accommodate this increase in capacity by scaling back its own commitment to the relevant markets, as doing so would jeopardise by far the largest elements in its operations. As a result, aggregate capacity will rise, as it has indeed been doing in recent years.

Faced with this increase, we believe Qantas could sustain the costs it involves and would do so, given that the strategy would be profitable in terms of the Qantas network as a whole. As for Air New Zealand, it would remain cash positive, though its contribution margins would be very heavily dependent on its domestic routes. The situation could in that sense be sustainable for a time.

That said, we acknowledge that such a situation could place severe strains on Air New Zealand. It is possible that, faced with these strains, limitations on the funding available from the New Zealand Government would force a drastic scaling back of Air New Zealand's operations. In Confidential Appendix F, we set out our understanding of what such a scenario would entail, and its implications.[8] The essence of this scenario is the retrenchment of Air New Zealand from a wide range of routes and the disposal of a significant share of its current fleet.

While resource costs would clearly diminish under this scenario, its longer term implications for New Zealand's economy would be adverse in numerous respects.

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competition and how deep do you think the public pocket should be to keep that competition moving along?

[8] That scenario is Confidential as it relies on material that would not be appropriate to disclose to Air New Zealand's competitors.

More specifically, the scaling back, if not substantial elimination, of long haul operations would seriously jeopardise New Zealand's tourism industry. Obviously, some tourist flows would remain; but the fact of the matter is that only Air New Zealand has the option of flying direct routes to New Zealand from many important sources of tourists. Additionally and importantly, Air New Zealand has a direct interest in, and a demonstrated commitment to, promoting tourism over those routes to New Zealand. A marginalised Air New Zealand, flying primarily the Tasman and domestically, could not realistically be expected to be the force for tourist promotion that the current airline is.[9]

Moreover, as the long haul operations were curtailed, so too would be the access to air freight of New Zealand exporters. Particularly for perishables, exporters would either need to incur higher costs (as dedicated freighters would need to be used) or face the penalties involved in relying on transit routings.

Finally and not without significance, such a scenario would impose substantial costs on Air New Zealand's suppliers and employees. While the idea of allowing the market to sort out winners and losers has its obvious and glib attractions, the reality is that large scale retrenchments are highly costly to society. Indeed, the collapse of Ansett highlighted the very wide range of social costs retrenchment in the airline industry can give rise to, although that case obviously involved the complete failure of an airline, rather than (far reaching) scaling back of capacity.

Although our analysis of the confidential counterfactual reflects what we believe to be sound judgements, it is worth noting that we are not convinced of the ultimate viability of the scenario it sets out. Scaling back an airline is a hazardous operation, that can make the airline ever more dependent on a small number of core routes. This, in turn, makes that airline ever less attractive to the high yield segment, forcing down its average revenue. As competition is attracted to those routes on which it now more heavily depends, a 'death spiral' can be engaged, in which costs cannot be removed as quickly as margins are eroded. The scenario set out in the Confidential Attachment is therefore far from being a 'worst case.'

That said, if it were thought highly likely that this scenario would otherwise eventuate, the case for authorisation of the Alliance would be self-evident. The competitive detriment, properly evaluated, would be slight, though on some routes, the parties would continue to compete. At the

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9 Equally, if Air New Zealand were replaced by a VBA flying essentially on the Tasman, that too would do little for tourism to New Zealand.

same time, the public benefits of the Alliance – in terms of tourism, freight and the avoidance of high adjustment costs – would be tangible.

We have therefore undertaken the modelling of the impacts of the Alliance not in terms of this scenario, but rather relative to a continuation of the pattern that has characterised recent years – that is, sustained competition on a capacity basis both within New Zealand and across the Tasman. This is a substantially more conservative approach, in that it sets a higher hurdle for the assessment of net public benefits. But we do not believe that the risk of far more adverse outcomes can or should be ignored, as they are by no means implausible.

The question may be raised of whether there is not a realistic prospect of a less demanding form of competition eventuating – a form of competition perhaps best described as 'cosy duopoly.'

As a general matter, aviation does not have characteristics that make for 'cosy duopoly.' Fixed costs are high, marginal costs are very low, the product is highly perishable, and sales occur in small units, with prices that are complex and relatively difficult to observe. These are features that make for very strong competition, and indeed, are closely associated with industries that fail to attain profitable equilibria.[10] Seen in the light of these features, it is unsurprising that aviation, in competitive markets, has generally had great difficulty in covering its cost of capital, and that – some two decades after liberalisation – network carriers worldwide have still not found a business model that allows commercial viability in a competitive context.

As a result, to the extent to which there are cosy duopolies in world aviation, they are based on rather narrow and specific circumstances that rarely occur when competing airlines go head to head on core routes. In particular, we are unaware of any such duopolies persisting in markets not controlled by *de jure* or *de facto* regulation. In these markets, it is the regulator that enforces a division of market shares and capacity, and hence effectively controls fare levels and the extent and distribution of profits. Once the regulation is removed, the 'cosy' division of profitability goes with it.

The markets here at issue are unregulated, and hence it cannot be regulatory constraints that result in a mutually profitable arrangement emerging and persisting. Rather any such arrangement would need to evolve out of the dynamic of the competitive relation between the parties. Yet, were it the case that a "cosy duopoly" might emerge, surely some signs of it, or moves in that direction,

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10 In the jargon of economics, these are industries in which markets may lack a core.

would have appeared in the competitive interaction to date; but no such trend has occurred. A scenario that relied on such a move would therefore be both inconsistent with the global pattern (in which 'cosy duopoly' is associated with regulation) and plainly at odds with the experience to date.

Given this, we feel confident that the appropriate alternative against which to evaluate the economic consequences of the Alliance is one of continued capacity-based competition.

Compared to that alternative, the Alliance will bring profound changes. Once the proposal is in place, all decisions with respect to the parties' flights affecting New Zealand – that is, either within, or to or from, New Zealand – will be coordinated. Duplication that would otherwise occur would be avoided, so that costs would be substantially lower than in the world without the Alliance. No less importantly, coordinated decision-making would allow better scheduling of flights, as the current incentive the parties have to shadow each other's scheduled times would be eliminated. Further, combining the parties' load would make a wider range of direct services profitable, and hence would provide an incentive for city-pairs to be served that currently are only available through indirect flights. Overall, looking to the next 3 to 5 years, the effect of the Alliance would be to:

- increase capacity, relative to the current situation, though not as compared to the extensive duplication likely to occur in the Alliance's absence;
- improve scheduling and expand the range of direct services; and
- reduce costs relative to the world without the Alliance.

The modelling that generates these results is presented in section 4.1. The schedules that would prevail in the world with the Alliance were provided by the parties (based on estimates by the parties at a point in time), and the modelling shows that these schedules, and the aggregate capacity they imply, would be materially more profitable to the parties' than those that we believe would prevail in the world absent the Alliance. As a result, and for the additional reasons set out above, we believe that they are credible expectations of outcomes, were the Alliance to go ahead.

The competitive detriment

To secure these effects, the Alliance will effectively remove competition between the parties. At the same time, however, we believe it will stimulate competition from new sources, and most notably from low cost airlines. In turn, this will have substantial impacts on the intensity of competition overall. A careful consideration of the competitive context and of the manner in

which it will be affected by the Alliance is essential to fully understanding the changes that are likely to occur.

The starting point in this respect is definition of the markets which will be affected by the Alliance. For reasons summarised in section 2.2, and set out in greater detail in Appendix A, both commercial reality and the more formal approach to market definition typically adopted by competition authorities suggest that, as far as passenger aviation services are concerned, the relevant geographic markets are: the Australia-New Zealand aviation market – or alternatively, the market for trans-Tasman aviation, the market for services in Australia, and the market for services in New Zealand. Within the New Zealand domestic market, we believe it is helpful to distinguish between main trunk services and other services provided domestically within New Zealand. There is also a market for aviation services between New Zealand and the Pacific Islands. (We do not have a firm view on the relevant markets in which services along other directly affected international routes are provided, nor do we believe that such a view is required to assess the issues raised in the matter at hand.) There would also be impacts in the market for air freight, as well as in the market for travel agency services.

The principal effects arise in respect of passenger aviation services. Here the impact of the Alliance would be to significantly increase concentration levels. In some cases, absent new entry, a sole provider would be left on a sector. The likelihood of new entry, its timing and probable scale, are therefore of some significance.

There is scope for a lengthy, but likely inconclusive, discussion of the height of entry barriers into aviation markets. For reasons set out in section 2.3.2, we believe that the more relevant concern is the extent of barriers to expansion. More specifically, it is our view that, as compared to *ex novo* entry, there are few barriers to expansion onto Tasman or domestic New Zealand routes. A small number of routes account for the vast bulk of revenues, while "hub effects", in which an entrant must match the extensive connectivity offered by an incumbent's hub-and-spoke network, play little role.[11] Especially for an airline that has already established itself in the Australia-New

[11] Hub effects – associated with "fortress hubs" such as Chicago or Forth Worth – are often viewed as the major source of entry barriers into the North American aviation market. Although Sydney and Auckland are to some extent hubs for Qantas and Air New Zealand respectively, the degree of hubbing at these nodes is nowhere near being on a scale comparable to that which occurs in the larger hub-and-spoke networks in the US. This reflects the importance of a small number of direct routes (such as Sydney-Auckland and Auckland-Wellington) in the Australasian network.

Zealand market, the costs and risks involved in expansion are therefore likely to be low, as substantial competitive presence can be obtained by providing a small number of point-to-point flights. The success of VBA entry internationally, and of Virgin Blue in Australia, confirms the scope for low cost sources of new competition, once established, to rapidly expand.

For reasons summarised in section 2.3.5, if the Alliance proceeds, it is likely to be profitable for Virgin Blue to expand into the markets most directly affected, and notably the Tasman and the domestic trunk route market in New Zealand, or for a new low cost airline to enter. Indeed, as noted in the same section, public statements made by Virgin, especially prior to and immediately subsequent to the Alliance being announced, clearly indicate that it intends to soon enter Tasman and domestic New Zealand main trunk routes.

Additionally and importantly, economic analysis suggests that VBA entry will be more profitable and hence likely if the Alliance occurs than it would otherwise be. Moreover, it will also be profitable on a greater scale than would otherwise be the case. As a result, we attach a high likelihood to full scale VBA entry occurring in the factual; we do not believe it to be likely, at least in domestic New Zealand, should the Alliance not go ahead.

The logic underpinning this differential in the likelihood of entry is simple. In the world without the Alliance, capacity will be substantially greater in both the Tasman and in domestic New Zealand than it would be were the Alliance to proceed. A VBA entering the market would face a situation in which the segments VBAs normally address, especially in their initial stages of expansion, would already be over-serviced, with low prices and economic losses. It is difficult to see why even a low cost airline would choose to expand onto these routes under those conditions.

This is not to say that we believe that in the counterfactual world, VBA entry would never occur. On the contrary: there is a compelling commercial logic for a carrier such as Virgin Blue to expand the geographical scope of its operations from Australia to New Zealand. In particular, such an expansion does not require fleet reconfiguration, could allow higher capacity utilisation, would permit the brand to be more fully exploited and – last but not least – would reduce vulnerability to entry by additional VBAs in the Australian market. Nonetheless, it is clear that any airline will choose routes on the basis of relative profitability; and in the world without the Alliance, it is apparent that the routes at issue would not be an attractive option for an entrant in the period analysed.

We therefore feel that it is reasonable to expect that on some routes, particularly in domestic New Zealand, VBA entry would eventuate in the world with the Alliance, but not in the world without. The fact that the parties are willing to propose Undertakings and Conditions that could materially facilitate entry adds further weight to this inference, though our modelling has not taken the

impact of any such Undertakings and Conditions into account. Rather, our modelling reflects our expectations with respect to entry as they are determined by the profitability of that entry, though we also examine the sensitivity of the outcomes to alternative assumptions.

The consequences for prices and outputs

In short, we expect the Alliance to have two, inter-related, effects on market structure: it will eliminate competition between the parties; and it will accelerate VBA expansion on to the affected routes.

To quantify these impacts, and more specifically their implications for prices and outputs, we have developed models that are set out at section 4.1. These models are based on approaches that are very widely used in, and well accepted by, the economic literature. Essentially, they determine outcomes as a result of a process in which rival firms set the quantities they will offer, with markets establishing prices that clear these quantities.[12]

It is important to note that these models, at least in the specifications we have adopted, are conservative, for at least two reasons.

The first and perhaps most important is that they do not capture some important aspects of price setting behaviour in airlines. More specifically, the modelling essentially derives an **average** fare. However, in reality, airline prices, particularly those charged by network carriers, are extensively differentiated – network carriers' fare structures, in other words, display very substantial price discrimination.[13]

Given that marginal costs are low relative to fixed costs, airlines have strong incentives to achieve high load factors, and use price discrimination (generally referred to as 'yield management') to do

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12 In the jargon of economics, the model we have used is a Cournot model.

13 As an illustration, we performed a simple search on the Virgin Blue and Qantas Internet sites on 15 November, 2002, for a return flight between Sydney and Melbourne on 1 February, 2003. Virgin Blue offered only two fares, its "Fair Fare" priced at A$89 one way and its "Fully Flexible" fare prices at A$199 one way, giving an overall spread for a return flight of A$220. In contrast, Qantas offered a broader range of fares for an equivalent return flight, with the lowest fare priced at A$186 and an unrestricted fare was priced at A$481, giving an overall spread of A$295.

so. As a result, the average fare will significantly over-state the median fare, and even more so, the fare available to the marginal passenger. A model written in terms of average mark-ups will therefore over-state the level of prices that the most price-sensitive customers face. This means it will exaggerate the reductions in demand resulting from price changes, and will under-state load levels and actual outputs.[14]

Second, we believe that the approach we have adopted tends to understate the impacts rivalry between FSAs and VBAs have on price outcomes.

That this is so can be seen from the analysis (discussed in sections 2.1.3 and 4.2.1) of the impact of Virgin Blue's entry on prices in domestic Australia. Actual price reductions exceeded those predicted by our models by 2% to 13%. In essence, this reflects the fact that the type of model we have adopted embodies a less intense or 'tough' form of competition than is likely to occur between VBAs and FSAs.[15]

The results we set out therefore need to be seen as likely over-stating the competitive detriments the Alliance involves.

The results of our modelling are presented in section 4.2. As explained above, we assume that in the future with the Alliance VBA entry occurs both on key Tasman routes and on the main trunk routes in domestic New Zealand. More specifically, we assume that VBA entry on the Tasman occurs in the first year of the Alliance and by year 3 of the Alliance the VBA operates 5 aircraft on

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14 Indeed, a single supplier will generally find it easier to price discriminate, and is likely to discriminate more efficiently (in the sense of targeting lower prices at consumers with more elastic demand, rather than at the consumers most likely to switch supplier), than will duopolists or firms in a small number oligopoly. As a result, where the product lends itself to extensive price discrimination, output may well be higher under monopoly than under duopoly. This impact is completely ignored in the modelling approach we have adopted.

15 The difficulty oligopoly models have in capturing the intensity of actual price competition is widely recognised in the economic literature. As Bresnahan notes 'Even such simple theories as Cournot, Bertrant and collusion lead to very different $h(n)$ in $[p - mc(q/n) = h(n)]$ for per-firm output q/n and equal-sized firms n, where the "toughness of price competition" refers to the slope of $h(n)$ and not its level.' Bresnahan, Timothy J. 1992, 'Sutton's Sunk Costs and Market structure', 23, *Rand Journal of Economics,* p. 137.

Tasman routes. For domestic New Zealand, we assume that VBA entry occurs in the second year of the Alliance with 4 aircraft operating by year 3. In contrast, in the future without the Alliance we assumed that VBA entry would only occur on the Tasman. As in the future with the Alliance we assume entry would occur in year 1, however, we assume a lower level of entry than the future with the Alliance with only 4 aircraft operating on the Tasman by year 3. Variations to these VBA assumptions, including no entry, are considered as sensitivity tests.

It is important to note that all our results are presented as the difference between the future with the Alliance and the future without the Alliance. Hence, even though VBA entry may reduce price in the world with the Alliance compared to today's situation, this is not necessarily the case if the future without the Alliance also includes VBA entry. The impact on price and output will depend on the difference between the level of VBA entry in these two future states of the world.

By year 3 of the Alliance, our analysis simulates an average[16] maximum price change of 4.7% on Tasman routes and 4.3% on domestic New Zealand routes. Associated with these price changes, output is estimated to decline by an average[17] 5.9% on Tasman routes and by 3.6% on domestic New Zealand routes. Importantly, these results are the estimated price changes between the factual and counterfactual. The results compared to today are substantially different. On the Tasman, the weighted average price increase estimated by the model between the factual and the base case is 1.7% and on domestic New Zealand routes is 3.1%. More dramatically, the factual is estimated to result in 17.3% higher passenger volumes than the base case on Tasman routes and 17.6% higher passenger volumes on domestic New Zealand routes.

The changes in price (compared to the counterfactual) affect demand, and result in deadweight losses – that is, in consumption being foregone that consumers value at more than its cost to society. Three years after the transaction the estimated deadweight loss associated with the above price and output changes is estimated to be $20.1 million in Australia and $25.9 million in New Zealand.[18]

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16 Weighted using factual passenger volumes.

17 Weighted using factual passenger volumes.

18 All detriments and benefits are presented in Australian dollars in present value terms.

As part of the proposed transaction, we understand that the parties will be offering significant undertakings and conditions aimed both at facilitating entry and at providing assurances about the range and prices of services to consumers. The undertakings and conditions will be designed to facilitate and protect new entry. In addition, the parties will discuss with the ACCC and the NZCC undertakings and conditions to ensure that the Alliance does not act unreasonably with respect to capacity and prices on routes where the parties will be the sole operators; and to ensure the delivery of certain of the public benefits identified. Our estimates of detriments in the passenger services market do not reflect the effect these undertakings and conditions would have.

The competitive detriments are far slighter in the other markets. In air freight, entry barriers are low. Although the bulk of air freight in the markets affected by the transaction is currently transported in scheduled passenger services, specialised freight carriers could readily expand and defeat any sustained price increase. In the market for travel agency services, we do not believe there would be any competitive detriments, though the Alliance could accelerate the process by which travel agents face displacement from new forms of distribution.

Public benefits

Given the impacts set out above, the crucial issue is whether there are benefits that outweigh any harm the detriments entail. It is our conclusion that there are indeed such benefits, and that overall, the Alliance is efficiency-enhancing. Section 5 of our report presents our results with respect to the public benefits associated with the Alliance.

We identify seven main types of benefits.

Cost savings

To begin with, the Alliance permits substantial cost savings associated with avoiding at least some of the duplication of capacity that already now occurs and is likely to worsen in the world without the Alliance. For instance, we estimate the annual benefits by year 3 of the Alliance associated with cost efficiencies to be $183 million and $140 million for New Zealand and Australia, respectively.[19]

[19] As we have noted above, we do not believe there is any reason to expect these cost savings to be dissipated if not passed on. More generally, with respect to the impact of the Alliance on productive efficiency and innovation, there are good reasons to believe investment in cost-

Over its first five years, the Alliance would save an amount that – in NPV terms as of today – would amount to nearly $1,086 million.

Improved scheduling

Second, through better coordination, the Alliance will allow improvements in scheduling and the introduction of a number of new direct routes – for example, from Auckland to Adelaide and from Wellington to Canberra. We estimate that by year 3 of the Alliance these improvements will yield annual benefits worth $21 million and $14 million for New Zealand and Australia, respectively.

Promotion of tourism

Third, we believe the Alliance will have a significant impact on tourism. The reality is that attracting tourists to Australia and New Zealand will remain a substantial task in the years ahead, and indeed in some respects, will become more difficult. Although the pool of potential first-time tourists will continue to expand, it will not be sufficient to keep the tourism infrastructure fully utilised. At the same time, promotion and marketing costs in key markets overseas are rising, and notably for television advertising, are likely to continue doing so.

Experience, both in Australia and New Zealand and overseas, confirms that nationally-based carriers are among the most significant sources of outlays on promoting tourism. This reflects the fact that they are generally well-placed to capture the gains from that promotion, especially when the promotion centres on both a destination and a brand. By ensuring the continued and strengthened ability of both parties to act as fully-fledged participants in an ever more global aviation market, the Alliance will protect and advance the role Qantas and Air New Zealand play

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reducing and quality-enhancing innovation will be at least as high under the factual as the counterfactual. Under the counterfactual, harsh price competition will reduce carriers' broad capacity to invest, reducing access to funds, availability of scarce managerial time, and the attractiveness of any investment (because of the difficulty of making a return on it). In contrast, the Alliance will have greater incentives to invest because the gains of investment are more readily claimed by the investor.

in promoting tourism to this part of the world. At the same time, it will ensure that each of the parties has an interest in promoting both destinations.[20]

In addition to these impacts on the parties generally, the Alliance will have the following major effects:

- It will substantially increase the incentive for Qantas to promote tourism to New Zealand, most notably through Qantas Holidays. Not only will Qantas Holidays be in a position to sell Air New Zealand services; New Zealand will become more profitable for Qantas, and it will be possible for Qantas Holidays, working jointly with Air New Zealand, to develop new packages aimed at developing important market segments, most notably in Asia.

- It will make it possible for the parties to develop a range of fares and more generally, packages, aimed at dual-destination travellers. For example, unlike the situation today, the parties will be able to develop attractive fares in which a tourist from Asia visits first Australia and then New Zealand, without needing to return to Australia for the homeward leg. This will increase the profitability to the parties of dual destination travel, thereby encouraging its more active promotion.

- It will allow the parties to save on promotional expenditures that currently serve only to offset each other's advertising and marketing efforts. These expenditures can be reallocated to other, more productive, uses.

Given these impacts, we believe that aggregate tourism to New Zealand will increase by 53,000 tourists per year over the levels that would otherwise have been achieved. Tourist volumes to Australia will also increase significantly. This increase in tourist numbers will translate into a gain, in the third year of the Alliance, of $128 million and $148 million to Australia and New Zealand respectively.

In evaluating the extent of the increase in tourism numbers, we have relied on two approaches.

The first is a study conducted by a specialist tourism consultancy, Tourism Future International ("**TFI**"). TFI examined the scope and incentive for Qantas Holidays to promote incremental

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[20] Currently, when Qantas promotes New Zealand, say in its advertising material, it faces the risk that the benefit will accrue to Air New Zealand.

tourism into New Zealand, and derived estimates of the likely extent of the effects from the Alliance.

In parallel but independently, we modelled the impact of promotion outlays on tourism inflows. Given these estimates, we were able to assess the effect of greater promotional effectiveness (which arises from consolidating the parties' promotional efforts in an activity characterised by significant scale economies). The overall impacts are then the combined outcome of these effects.

At the same time, we have looked closely at the methods used to evaluate the economic impact of additional tourism numbers.

Additional net inbound tourism is an increase in exports. Like any other increase in exports, the evaluation of net economic impacts depend on the assumptions made about how the economy as a whole operates. In a partial equilibrium framework, which is that used for competition policy analysis,[21] the impact effects of additional tourism outlays are relatively high. In contrast, were a general equilibrium approach to be adopted, the net impacts would be lower.

There are, in our view, significant difficulties involved in adopting a general equilibrium approach. For example, estimates of deadweight losses are generally determined in a partial equilibrium context, and stringent assumptions need to be made to translate these into a general equilibrium approach. And it would obviously be incorrect to adopt a partial equilibrium approach to assessing detriments, while using a general equilibrium model for evaluating benefits.

We have nonetheless considered how much of an impact would flow from estimating the economic consequences of additional tourism flows using a general, rather than partial, equilibrium approach. Our analysis shows that this would only slightly reduce the benefits we have modelled. We therefore conclude that the Alliance will stimulate a significant increase in inbound tourism, especially to New Zealand, yielding sizeable economic benefits.

Freight

Fourth, the Alliance will make it possible to increase freight capacity, most notably from New Zealand to Australia. More specifically, we expect the Alliance to provide an additional 247 tonnes of freight capacity per week compared to the future without the Alliance. Assuming no change in

[21] For example, quantitative estimates of competitive detriments, as reported by the ACCC and the NZCC, are clearly partial equilibrium in nature.

the price of freight services, this amounts to an annual benefit of approximately $4.6 million by year 3 of the Alliance. By easing the current bottleneck on Tasman freight, the Alliance will also increase the scope for inter-lining New Zealand air freight through Australia to Asia. Overall, the changes in freight capacity arising from the Alliance will assist exporters and more generally international trade in both economies.

Skilled employment

Fifth, the Alliance will have positive effects on skilled employment, notably in New Zealand. In particular, if the Alliance proceeds, Qantas will have incentives to continue contracting a substantial part of its outsourced heavy maintenance to Air New Zealand. Qantas' equity share in Air New Zealand will make continued reliance on Air New Zealand's maintenance operations commercially attractive for Qantas, even if there exist more competitive alternatives. This assurance of future volumes amounting to some $39 million in annual billings will, in turn, allow Air New Zealand to invest in new maintenance facilities at its Auckland base – facilities which can be used to compete for maintenance work internationally. The result will be to provide expansion of servicing activities in New Zealand and to provide employment security for the skilled staff involved, preventing the loss of these skills to overseas. We have taken a conservative approach to the value of these benefits, only valuing the known increase in servicing expenditure due to the Alliance. This amounts to $39 million per year (or $35 million in present value terms).

Use of public funds

Sixth, we believe there will be significant gains to New Zealand taxpayers that are above and beyond the direct impacts set out above. More specifically, it is our view that in the absence of the Alliance, there is a very real risk that the New Zealand Government will ultimately have to make further equity injections into Air New Zealand. These equity contributions will come at the expense of other projects, and like other uses of public funds, will incur the deadweight loss associated with taxation. In contrast, under the Alliance, it is Qantas that will provide additional equity, allowing the task of securing that funding to be handled within the private sector, free of the excess burden taxation involves.

Additional benefits

Finally, additional benefits may arise on the grounds of having a more robust and viable international airline located in the Australia-New Zealand region, as well as preserving the national flag carriers.

Not all these benefits are capable of being rigorously quantified. We have therefore not sought to place a numerical weight on all the sources of benefits that are relevant to this transaction. More

specifically, benefits such as governance efficiencies, the greater sustainability of a national flag carrier for New Zealand and the increased ability of the parties to compete and operate globally are not captured in our estimates. These estimates are consequently conservative, all the more so as we have not sought to quantify the social costs that would arise if the scenario we set out in Confidential Appendix F were to eventuate.

Overall outcomes

Even though our modelling, reported in sections 4 and 5, does not quantify all the gains from the Alliance, it nonetheless shows that the benefits from the Alliance outweigh the detriments in all scenarios. More specifically, even if it is assumed that no entry occurs, and that no undertakings or conditions are in place, the benefits from the Alliance substantially exceed the detriments in both Australia and New Zealand. Under the VBA entry scenario outlined above we estimate that the net benefit over the first five years of the Alliance would be $1,022 million in Australia and $1,433 million in New Zealand. The composition of these net benefit estimates are summarised below in Table 1.

Even if it is assumed that no new entry occurs, and that no undertakings or conditions are in place, the benefits from the Alliance substantially exceed the detriments, by $1,021 million in Australia and by $1,249 million in New Zealand over the first five years of the Alliance.

Table 1: Summary of net benefit estimates, $ million

	Benefits						Detriments		Net benefit		
	Cost Savings	*Scheduling*	*New direct*	*Tourism*	*E&M*	*Freight*	*Dead-weight loss*	*Net Transfer*	*Total*	*NZ*	*Australia*
1	-$21	$14	$26	$120	$39	$1	$71	-$14	$123	$67	$56
2	$172	$13	$24	$237	$37	$0	$25	-$1	$457	$285	$172
3	$323	$11	$23	$276	$34	$5	$46	-$29	$656	$379	$277
4	$314	$11	$22	$260	$33	$5	$44	-$28	$628	$361	$266
5	$297	$10	$21	$244	$31	$5	$43	-$26	$590	$340	$251
Total	$1,086	$60	$116	$1,134	$175	$15	$230	-$98	$2,454	$1,433	$1,022

Conclusions

Aviation, both domestically and internationally, has been reshaped over the last decade. Carriers such as Swissair, Canadian and Ansett - that seemed well-established, with large frequent flyer programmes, strong brands, and substantial corporate accounts - have disappeared, imposing very high adjustment costs on their employees and on the community more widely. Entirely new forms of competition, based on offering low cost, point-to-point travel - have taken their place, and indeed seem likely to eventually secure over 40 per cent of global airline travel.[22] Faced with

[22] Generally, some 30-40% percent of airline travellers have complex itineraries that require connectivity and interlining. These travellers are less likely to use low-cost, point-to-point airlines. VBAs seem likely to be able to secure over half of those travellers who do not need connectivity, giving that form of travel a global market share in the order of 40%. Global aircraft orders by VBA suggest an even higher estimated market share, at least over the longer run.

these developments, even global carriers such as British Airways and United, which only recently seemed highly profitable, have incurred substantial losses and had to retrench capacity.

Looking forward, the only certainty is that the competitive pressures that characterised the decade that has gone by will persist and intensify.

The transaction here at issue is intended to best position the parties to face these challenges. It will help them achieve the efficiencies needed to remain competitive with low cost, point-to-point rivals, while also giving them the greatest ability to participate on favourable terms in increasingly globalised markets. Ultimately, it will allow them to remain as network carriers, with the benefits that brings not only to the travelling public, but also to national economies more widely.

To secure these outcomes, the Alliance will eliminate the competition which would otherwise exist between the parties. Competition, however, is a means, not an end. Competition policy, both in Australia and in New Zealand, recognises this, by providing for authorisation of socially desirable conduct that would otherwise breach the competition laws. It is against this backdrop that the proposed transaction needs to be seen and assessed.

The assessment of the transaction summarised here has been carried out on strict economic grounds. It starts by considering the impacts of the Alliance on market structure and rivalry.

In examining these impacts, we accept the importance of appropriately defining the relevant markets. Nonetheless, we view this as an essentially heuristic task, rather than as an end in itself. So as to be conservative, we have adopted fairly narrow market definitions built up from city pairs. However, we do not believe any of our conclusions rely on the market definitions adopted.

We accept that the Alliance will result in a significant increase in market concentration. Having said that, we believe that the costs of expansion on to Tasman or main trunk routes in New Zealand would likely be low for a carrier already established in Australia or New Zealand, and more specifically for Virgin Blue. We also believe that were prices to rise or capacity to be reduced, entry and expansion would quickly become even more profitable. It is consequently our view, that should the Alliance proceed, full scale VBA entry will occur, while it is much less likely to do so in the Alliance's absence.

Given this assessment of the Alliance's impacts on market structure, we have considered its effects on costs and outputs. We find that the benefits from the Alliance are so great as to plainly offset any competitive detriment. These benefits include cost efficiencies, but also improved customer convenience in terms of scheduling and direct services, enhanced promotion of tourism, greater freight capacity, the protection and promotion of skilled employment and savings in public outlays (and hence a reduced deadweight loss from taxation). The benefits in these respects are

great enough to materially exceed the costs in each of the scenarios we have assessed, including those where no new entry occurs.

A full analysis of the social consequences of the Alliance would place more weight than we have been able to on several aspects of the comparison of the world 'with' and 'without' the Alliance. There are long term benefits to both carriers from consolidating their position in the face of growing international competition. We have not been able to quantify these benefits, but this cannot be taken to mean that they are not material. The New Zealand Government's decision to take a substantial stake in Air New Zealand attests to the community significance these benefits have.

Additionally and importantly, for reasons we set out above, we are not convinced that a similar arrangement, further into an intense period of competition for market share between Qantas and Air New Zealand, would or could provide as much benefit to the parties. We believe that waiting would be especially costly to Air New Zealand and to New Zealand as a community. Relative to the substantial risks inherent in the current situation, the Alliance offers a far more secure path to a viable future for Air New Zealand, as well as a better opportunity for Qantas to strengthen its ability to compete against mega-carriers from other parts of the world (many of which are government owned or supported). We have not sought to quantify the loss that would occur in the world without the Alliance of the 'option value' of securing a more advantageous transaction now.

Even on these conservative assumptions, the gains, both to Australia and New Zealand, significantly exceed the costs. As a result, we believe the transaction readily meets the hurdles set by the competition laws and ought to be authorised.

1 Introduction

The Network Economics Consulting Group Pty Ltd (NECG) has been engaged by Qantas and Air New Zealand to undertake an economic analysis of the competitive detriments and public benefits of the Alliance between Qantas and Air New Zealand, in particular:

1. Determine the most likely outcome(s) in the absence of the Alliance (the 'counterfactual(s)'), based on NECG's knowledge of the industry economics, and through discussions with the parties.

2. Advise on the economic principles underlying the legal competition analysis, including the scope of the relevant markets.

3. Identify and quantify, where possible, the likely benefits, detriments and competitive effects on the relevant markets of the Alliance, as compared to the counterfactual.

4. Prepare a report on NECG's economic analysis, which concludes whether the Alliance satisfies the criteria for authorisation.

5. Respond to any issues that may arise during the process of the regulators' assessment of the authorisation applications.

Our economic analysis of the detriments and benefits, including our analysis of the specific issues listed above, relies on data and information provided by both Air New Zealand and Qantas, as well as other documents, which are noted and referenced throughout the body of this report where appropriate.

1.1 Description of the Alliance

The Alliance will involve Air New Zealand and Qantas entering into a Strategic Alliance Agreement which will, amongst other things, involve the coordination of all Air New Zealand flights and Qantas flights which operate to, from and within New Zealand. As a pre-condition to the Alliance, Qantas will acquire a 22.5% 'cornerstone' shareholding in Air New Zealand. Qantas proposes entering into a Subscription Agreement with Air New Zealand under which it will agree to acquire this shareholding.

The Alliance will involve the coordination of all business activities undertaken in respect of the JAO Networks, including the scheduling and pricing of all services. The parties will also include a

formula for comparing the net positions of each party, which may lead to a transfer payment being made form one party to the other. Air New Zealand will manage the JAO Network and, subject to input from a Strategic Alliance Advisory Group (which will consist of an equal number of Air New Zealand and Qantas representatives), will be responsible for running the day-to-day operations of the JAO. Qantas will participate in Air New Zealand's management of the JAO Networks through its representation on the Strategic Alliance Advisory Group and through Qantas personnel seconded to Air New Zealand from time to time.

The Alliance will include Freedom Air, which is owned by Air New Zealand but which will be subject to separate management arrangements to those applying to the Alliance generally. The Alliance will also include Qantas codeshare revenues on Air Pacific flights (Air Pacific and Qantas are related companies with Qantas having a 46.32% shareholding in Air Pacific and significant board representation). Until the existing alliance arrangements between Air New Zealand and United Airlines expire or terminate, New Zealand/United States routes will not form part of the JAO Networks.

As part of the application for authorisation it is our understanding that Qantas and Air New Zealand will be offering enforceable undertakings and conditions. The undertakings and conditions will be designed to achieve the following objectives:

- to facilitate and protect new entry on trans-Tasman and domestic New Zealand routes, including access to terminals, ground services and engineering facilities;
- to ensure that the Alliance does not take unreasonable actions relating to capacity or pricing on routes where the Parties will be the sole operators; and
- to ensure the delivery certain of the public benefits identified in the Application.

1.2 Report structure

Our report, which presents the findings of our analysis, is structured as follows:

- Section 2 highlights the major trends affecting the airline industry relevant to an evaluation of the costs and benefits of the Alliance. It also sets out our approach to market definition and competitive effects, which underpins our views regarding the future state of competition in those markets with and without the Alliance, and hence, the likely cost-benefit calculation associated with the proposal. A detailed analysis of market definition issues is presented in Appendix A.

- Section 3 sets out the main features of the future world with and without the Alliance. These scenarios form the basis of the assessment of competitive detriments and public benefits in the remainder of the report.

- Section 4 examines the competitive detriments associated with the Alliance as compared to the future without the Alliance. This section reports the results of our merger simulation model in terms of price, output and welfare. Appendix E presents the details of the competitive detriments and public benefit modelling and the sensitivity of the model results to variations in input assumptions.

- Section 5 analyses the public benefits associated with the Alliance compared with the future in its absence. These benefits include cost savings, scheduling efficiencies, tourism and capital related efficiencies.

- Section 6 balances the competitive detriments and public benefits quantified in the previous sections.

2 The Competitive Context

2.1 Global trends in airline industry

The following global trends in airline markets are especially relevant in forming a view of the likely future state of the world with and without the Alliance:

- the changing extent and nature of domestic and international airline regulations, particularly as they relate to Australia and New Zealand;
- the emergence of global competition between airline alliances that has resulted from increased airline coordination;
- the price and output impacts of the rise of VBAs; and
- rationalisation in the ticket distribution industry.

2.1.1 Domestic and international airline regulations

Trends in domestic and international airline regulations are relevant in evaluating the appropriate geographic markets in which air services are provided domestically in Australia and New Zealand, on Tasman and other international routes (see section 2.2.3), as well as in considering expansion barriers (see section 2.3.2).

Domestic and international air services have traditionally been highly regulated.[23] Domestically, air services have been regulated by restrictions on entry and expansion and controls over pricing, the extent and precise form of these varying greatly from country to country. Internationally, regulation has occurred by means of bilateral air services arrangements (ASAs) between countries,

[23] For a discussion on the impact of regulation, deregulation and liberalisation in the air services industry, see Productivity Commission, 1999, *International Air Services*, and Yergin, D. Vietor, R. H. K. & Evans, P. C., 2000, 'Fettered Flight: Globalization And The Airline Industry', unpublished, November.

which grant the right to various 'freedoms of the air' to each country's authorised airlines, a basic system of air rights established under the Chicago Convention 1944. Qualification as an authorised airline is based on factors relating to ownership and control.

However, significant deregulation and liberalisation have occurred in recent years. In addition to strictly unilateral initiatives (such as the removal of domestic restrictions on entry and pricing), developments such as Open Skies agreements have, at least in some respects, overcome some of the restrictions created by the bilateral system.

The Open Skies agreement between Australia and New Zealand, agreed to in late 2000, continues the trend towards liberalisation created by the Single Aviation Market (SAM) arrangements signed between the two countries in 1996.[24] The Open Skies agreement allows for the following:

- any authorised airline to fly unrestricted between Australia and New Zealand;
- any authorised airline to operate domestic services in Australia and New Zealand, and to carry domestic passengers on international services between airports approved for international services in each country;
- removal of limits on the number of authorised airlines that can operate services linking any city-pair combinations within and directly between the two countries, and on passenger or freight capacity on such routes;
- removal of the beyond rights restrictions that existed under the SAM agreement;[25] and
- granting of seventh freedom rights for dedicated freight services to international airlines of both countries.[26]

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24 See http://www.executive.govt.nz/minister/gosche/open_skies/joint_pr.htm; and http://www.executive.govt.nz/minister/gosche/open_skies/backgrounder.htm.

25 Beyond (or fifth) freedom rights allow for an airline to fly between two countries provided that the flight originates or terminates in the airline's home country. Under the SAM, beyond services were limited to 12 Boeing 747s per week to a maximum of 11 countries.

26 Seventh freedom rights allow for an airline to operate services between two countries regardless of whether the airline stops at a port in the airline's home country at any stage of the journey.

The Open Skies arrangement also opens the possibility for the granting of seventh freedom rights for passenger services. However, the Open Skies agreement continues to impose the ownership and control restrictions that prevailed under the SAM agreement. In order to be classed as an authorised airline, an airline is required to meet certain ownership and control requirements or otherwise receive ministerial approval in both countries. It also has to meet operational requirements covering security, insurance, noise and operational authorisations from both countries.[27]

The liberalisation apparent in the Open Skies agreement, relative to the system of restrictions that was previously in place, has been paralleled, albeit to differing extents, in major jurisdictions overseas, including Europe and the United States.

2.1.2 Increased airline coordination and competition between airline alliances

Deregulation and liberalisation of airline markets have placed sustained pressure on airlines to drive cost reductions and efficiencies to survive and compete in an increasingly global market. At the same time, airlines have also been forced to respond to changes in consumer preferences, including demand for seamless travel. The result has been significant structural change in the airline industry, driven by a significant increase in coordination amongst airlines. This has been reflected in the emergence of global airline alliances as well as authorised agreements involving price and schedule coordination. This increased airline coordination has created a broader sphere of competition in which airline alliances compete with each other on a global network basis.

In reality, there is a broad spectrum in the extent to which airline alliances coordinate activities. For simplifying purposes, in its determination regarding the Restated Joint Services Agreement between Qantas and British Airways ('RJSA determination'), the ACCC referred to two broad types of alliances, namely 'marketing' alliances and 'integrated' alliances:[28]

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27 See http://www.transport.govt.nz/downloads/open_aviation_australia.pdf, paras 3.5 and 3.6.

28 ACCC, 2000, *Application for Authorisation: Joint Services Agreement between Qantas Airways Limited and British Airways Plc*, 10 May. Authorisation No: A30202, File No: C1999/767 ('RJSA determination'), p. 27.

> Integrated alliances … typically involve a high degree of integration of the airlines concerned, including coordination of fares, schedules, service levels and yield and capacity management … integrated alliances contemplate that the alliance carriers operate as a single competitive entity across part or all of their networks.
>
> Marketing alliances offer the consumer the benefits of broader networks, more seamless travel and expanded loyalty programs. However the alliance airlines generally continue to offer their fares, schedules and services independently, and airlines within the same marketing alliance may compete with each other if on the same route.

In addition to the types of coordination noted by the ACCC, integrated alliances may also involve joint purchasing of fuel, catering services, and possibly aircraft, as well as rationalisation of ground handling services.

Both marketing and integrated alliances have emerged as significant factors in the global aviation landscape. The growth in marketing alliances is reflected in their share of total international passenger traffic. The three major alliances of this kind are **one**world, the Star Alliance and SkyTeam. Credit Suisse First Boston (2002) estimates that these three alliances account for 53 per cent of global international passenger traffic.[29] A summary of airline membership to each of these three marketing alliances is presented in Table 2.

[29] Credit Suisse First Boston, 2002, *Global Airlines*, 24 May, p. 3.

Table 2: Summary of marketing alliance membership

oneworld	SkyTeam	Star Alliance
American Airlines	Delta	United Airlines
British Airways	Air France	Lufthansa
Iberia	Alitalia	All Nippon Airways
Qantas	Korean Air	Air Canada
Cathay Pacific	Aeromexico	SAS
Aer Lingus	CSA Czech Airlines	Air New Zealand
Finnair		Thai Airways International
Lanchile		Singapore Airlines
		Varig
		Austrian Airlines
		Mexicana
		bmi British Midland

Source: Credit Suisse First Boston, 2002, *Global Airlines*, 24 May.

Growth in integrated alliances has also been significant. One of the first integrated alliances was formed between KLM and Northwest, which now forms the basis of the Wings alliance.[30] Other integrated alliances have also been formed since this agreement, including the Joint Services Agreement between Qantas and British Airways. Most recently, the EU has approved an alliance involving Lufthansa, United Airlines and SAS, as well as alliances between KLM and Northwest and between Lufthansa and Austrian. In 2002 alone, seven integrated alliances were granted regulatory approval or re-approval:

- Delta–Air France–Alitalia–Czech Airlines
- American Airlines–Finnair

30 Credit Suisse First Boston, 2002, p. 15. Other airlines aligned with the Wings alliances are Japan Air Systems, Malaysia Airlines, Martinair, Kenya Airways and Surinam Airways.

- Lufthansa–Austrian Airlines
- Delta–Korean Airlines
- United–British Midland[31]
- Northwest-KLM
- United–Lufthansa–SAS

The fact that many integrated alliances have been authorised by regulatory bodies abroad is instructive, strongly suggesting that such agreements may be highly effective in realising cost benefits and generating consumer benefits, so much so that they outweigh any elements of such agreements that might impact on competition. This is consistent with the view that integrated alliances, as compared with marketing alliances, provide the greatest scope for realising cost savings and efficiencies.

A number of commentators believe that equity investments strengthen the commitment of airlines to the types of cooperative arrangements described above.[32] Some commentators go further, suggesting that even equity stakes may not be sufficient, and that only full corporate mergers would facilitate the full realisation of potential cost savings and consumer benefits.[33]

Economic analysis is certainly consistent with these views. The essence of equity participation is that it involves a claim on residual income – that is, on the income available after all fixed commitments have been met. At the same time, the acquisition of that claim is the acquisition of an asset that, as a general matter, has a disposal value that depends on the expectation of residual income into the future.

Because the claim is on residual income, the owner of that claim has a strong incentive to ensure that the assets from which the income stream is being derived are used efficiently. This is not

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31 Approval conditional on US–UK bilateral rights.

32 Tretheway, M. W. 1990, 'Globalization of the Airline Industry and Implications for Canada', *Logistics and Transportation Review*, vol. 26, issue 4, pp. 362–3.

33 ibid, p. 362. The argument is also noted in Credit Suisse First Boston, p. 26.

merely because that efficiency affects the current income stream to the owner but also because it is the primary determinant of the disposal value of the claim. Additionally, because the equity claim is simply against residual income, the owner of that claim will not have an interest in any particular uses of the underlying assets, but simply on securing those assets' most efficient use, whatever form that may take. In contrast, a more limited claim – say the claim on some or all of the income from a particular service, or a particular city-pair – would induce the owner of that claim to seek profit-maximisation with respect to that more limited area of operation, even if that involved incurring losses (or foregoing gains) more generally. Claims on residual income therefore most fully ensure that participating carriers have common interests and face well-aligned incentives.

At the same time, because equity claims carry the right to determine the entity's management, they also vest in the equity owner the means needed to give effect to the efficiency incentives set out above. They consequently provide both the incentives and the ability to seek efficient asset use. It follows that absent regulatory barriers, it is highly likely that airlines would move to full consolidation through merger, rather than relying on alliances to achieve efficiencies of coordination and greater reach.

In practice, however, the regulatory barriers to international consolidation remain formidable. Virtually universally, ASAs impose domestic ownership or control requirements that prevent entities that are both foreign owned and controlled from using the rights they provide, as noted in section 2.1.1. Although some change is underway, it will be many years before widespread liberalisation of these restrictions is secured. Indeed, at least as matters now stand, the prospects for any significant multilateral liberalisation of these restrictions are very limited – and absent multilateral liberalisation, bilateral moves alone cannot materially reduce these restrictions' effects. As a result, the scope for full merger is limited, and equity participation, when it occurs, falls short of complete integration.

Having said that, it is nonetheless important not to understate the significance of equity participation when it does occur. Equity participation, assuming it is on a material scale, defines a decision-making context quite different from the incentive structure typical of authorised arrangements involving price and schedule coordination. By its nature, equity participation creates incentives for **joint** efficiency maximisation, as the claimant on residual income has an incentive to expand the income of the entity on whose income it has a claim, including by expanding that entity's output, if it can thus serve the market at a lower cost. In contrast, in typical arrangements involving price and schedule coordination that do not involve equity participation, each party pursues its own interests, and gains, rather than loses, when others in the arrangement reduce output, even if their costs are lower than its own. At the same time, to the extent to which provision is made for joint control, greater means are provided for identifying and securing

opportunities for profit maximisation than would ever occur, in practice, within price and schedule coordinating arrangements.

It follows that efficiency gains, similar to those achievable by merger, are indeed most likely to be achieved where there is equity participation on a material scale, as the literature discussed above suggests.

2.1.3 The impacts of the rise of VBAs

As market entry has been liberalised, VBAs have emerged as a new and significant source of competition in airline markets around the world.

VBAs have been able to enter the market with lower cost structures compared with their FSA counterparts.[34] Significant cost savings achieved by VBAs relative to FSAs relate to the reduced range of services offered by VBAs, including the operation of a single cabin class, and the reduced provision of in-flight services. In addition to these cost savings, and to those which come from avoiding the legacy of industrial relations agreements that affect incumbent airlines, additional cost advantages are likely to relate to the focus on short-haul routes[35] (with potentially low

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34 Dresner, Lin, J. C. & Windle, R. 1996, 'The Impact of Low-Cost Carriers on Airport and Route Competition', *Journal of Transport Economics and Policy*, September, vol. 30, iss. 3, p. 311, who cite findings by Bennett and Craun, 1993, which found that incumbent FSAs had unit costs that were 50% to 70% higher than Southwest. The DOT reported that, for the 1998 calendar year, total domestic operating cost in cents per available seat mile for FSAs, adjusted for distance, ranged from 7.737 cents for America West and 9.123 cents for Delta to 11.582 cents for US Airways, while costs for Southwest and Frontier were, respectively, 6.083 and 8.626 cents. See United States Department of Transportation, 2001, *Findings and conclusions of the economic, policy and legal issues*, p. 29.

35 See http://www.ryanair.com/; http://www.easyjet.com/en/about/mission.html; and http://www.southwest.com/about_swa/financials/investor_relations_index.html.

turnaround times) using a single type of aircraft,[36] offering a more limited range of fare options,[37] and using ticketless booking systems.[38]

As such, VBAs have been able to target customers that are relatively more price sensitive, that is, have relatively low willingness to pay and high demand elasticities. However, this is not to suggest that VBAs do not also target business customers. Indeed, successful VBA entrants, including Virgin Blue, easyJet and Southwest, have also aimed to maximise their potential customer base by actively targeting business customers. As noted in section 2.2.1, in relatively small markets, such an approach may be necessary in order for VBAs to generate sufficient scope to fully exploit their lower cost structures and reach minimum efficient scale. To illustrate the point, Virgin Blue in Australia has, on several occasions, publicly stated its aim to target the business market. For instance, Brett Godfrey, chief executive of Virgin Blue, stated in a November 2000 interview:[39]

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36 See http://www.virginblue.com.au/; http://www.easyjet.com/en/about/infopack_overview.html; http://www.easyjet.com/en/about/aircraft.html; http://www.ryanair.com/; and http://www.southwest.com/about_swa/airborne.html.

37 See US DOT, 2001, p. 29.

38 See http://www.virginblue.com.au/faq.html; http://www.ryanair.com/FQ.html; http://www.easyjet.com/en/importantnotes.html; http://www.go-fly.com; and http://www.southwest.com/about_swa/airborne.html.

39 *Business Sunday* interview, 2000, Brett Godfrey, CEO, Virgin Blue, 26 November http://finance.ninemsn.com.au/businesssunday/Interviews/stories/story_1317.asp. See also Virgin Blue New Release, 2000, 'Virgin Blue Offers More Flights For Growing Business Market', 30 November, http://www.virginblue.com.au/. For a more recent public statement, see Virgin Blue New Release, 2002, 'Virgin Blue Boosts Services To WA', 19 April, http://www.virginblue.com.au/. The active targeting of business customers is also evidenced in the mission statement of easyJet and a Southwest annual report. See respectively, http://www.easyjet.com/en/about/mission.html; and Southwest Airlines, 1994 Annual Report, p. 5. It is likely that the targeting of business customers by VBAs has, at least in part, been assisted by the need for businesses to cut costs. See http://news.bbc.co.uk/hi/english/business/newsid_1593000/1593241.stm for the United

> We are very much focussed now on the business market as well. We're focussed on all markets and we're pricing accordingly.

This objective is also reflected in Virgin Blue's flight schedules. Whereas a VBA that was solely targeting discretionary leisure customers might only operate a few flights per day, Virgin Blue operated 11 return flights daily from Sydney to Melbourne as of July 2002.[40] This is also evident in its marketing and advertising strategies. An illustrative example is an advertisement placed by Virgin Blue in the *Australian Financial Review* on 2 September 2002:[41]

> At Virgin Blue, we've got times that fit your schedule, and fares that fit your budget. Our Fully Flexible fares allow you to organise travel around your needs. Get your business moving in the right direction, fly Virgin Blue.

Given their cost and operating characteristics, it is unsurprising that VBAs have proven to be a very effective source of competitive pressure in airline markets. Some of the key findings from the literature on the effects on prices and output of VBA entry include the following:

- *Studies from the US highlight the substantial price reductions and increases in output that have occurred on routes where there has been VBA entry*. For instance, Dresner et al. (1996) note case studies by Whinston and Collins (1992), Bennett and Craun (1993) and Windle and Dresner (1995), which each find that VBA entry resulted in substantial price reductions on the routes the VBAs contested.[42] Morrison (2001) estimates that Southwest was responsible for overall savings in the US of US$12.9 billion for the 1998 year. US$3.4 billion of these savings were directly related to Southwest's low fares, while US$9.5 billion represented the indirect competitive impacts of Southwest's conduct on the fares

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Kingdom perspective, which notes: 'As a sign of the times, even stellar investment banks are starting to encourage their staff to abandon business class for EasyJet, which services many of the major European airports.'

40 See http://www.virginblue.com.au/timetables/VBJuly02.pdf. Schedule effective for July 2002.

41 *Australian Financial Review*, 2002, 2 September, p. 5.

42 Dresner et al., 1996, p. 309.

of other carriers.[43] These savings were estimated to amount to 20% of the US airline industry's 1998 domestic scheduled passenger revenue.

- *There is evidence that the VBA presence alters the distribution of fares purchased*. Oster and Strong (2001) compared the distribution of fares for 150 city-pair routes two quarters before the entry of a low fare carrier, with the distribution of fares in the first quarter of 1997, with the low fare carrier still on the route. They found that the entry of a VBA substantially shifted the distribution of fares away from the higher fare classes toward the lower fare classes, resulting in the average fare falling from around US$173 to US$115, while traffic increased substantially.[44] Oster and Strong did, however, find that tickets were still sold across each of the fare classes following low fare entry, despite the distribution of tickets sold changing significantly.[45]

- *There is evidence that price reductions have arisen not only on routes directly affected by entry, but also spillover effects onto routes out of the airport not directly affected by entry as well as competing routes to nearby airports*. Dresner et al. (1996) considered the possibility for VBA entry on a route at a given airport creating spillover competitive effects either on other routes at the airport of entry, or routes at competing airports.[46] Dresner et al. first analysed the impact of Southwest's entry on the Baltimore-Washington Airport in September 1993. They found that yields fell and traffic rose substantially on routes that Southwest entered. More significantly, they found that yields fell and traffic rose on competitive routes from nearby airports and on other routes out of BWI that Southwest did not operate on. A broader econometric analysis on the competitive impacts of VBAs indicated that VBA entry resulted in lower yields and higher traffic levels on the route of

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43 Morrison, S. A. 2001, 'Actual, Adjacent, and Potential Competition: Estimating the Full Effect of Southwest Airlines', *Journal of Transport Economics and Policy*, May, vol. 35, iss. 2, pp. 239–56.

44 Oster, C. V. & Strong, J. S. 2001, *Predatory Practices in the U.S. Airline Industry*, January 15, http://dms3000.dot.gov/docimages/p57/121516.doc, p. 24.

45 ibid.

46 Dresner et al., *op. cit*.

entry and on competitive routes.[47] Dresner et al. found that when Southwest entered a route, yield reductions were around 50%, while for VBAs as a whole, reductions were 38%. On competitive routes, they found yield reductions ranged from 8% to 45% if Southwest served the competitive route while a range of 0% to 41% was found for VBAs as a whole. Dresner et al. therefore concluded that such spillover effects did exist, and hence, consumer welfare gains from VBA activity may have been larger than previously estimated. These are consistent with the effects of Virgin Blue's operations in Australia, discussed below.

- *There is evidence that the benefits of the price reductions that have occurred have not been offset by price increases on other routes*. Existing FSAs have not been able to sustain their original profitability levels by decreasing prices on some routes and increasing prices on others. For instance, Windle and Dresner (1998) found that competitive responses by incumbent FSAs to VBA entry were not offset by increasing prices on other routes without a VBA presence. Their findings were based on analysing the impact of ValuJet's entry into Delta's Atlanta hub.

Overall, the impacts on prices and output of VBA entry are much greater than those associated with competition between FSAs, with VBAs having an effect on competitive outcomes which can be substantially greater than their market share suggests.

In addition, we have obtained data from Qantas regarding the impact of Impulse and Virgin into the domestic Australian market. Results of analysis undertaken by Qantas are consistent with US studies that find that VBA entry has competitive effects that are wider than just on routes directly affected by entry.

Qantas domestic yields were analysed on a route by route basis for the period January–June 2001 versus January–June 2000. This period was chosen as Virgin Blue and Impulse had established services on 11 routes by this period and also to minimise other factors such as the Sydney Olympics and the collapse of Ansett. The routes operated by new entrants are listed in Table 3 below.

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47 In this context, 'competitive routes' refers to equivalent routes originating or terminating at competing nearby airports.

Table 3: Summary of routes operated by new entrants

Route	Airline(s)
SYD-MEL	Impulse
SYD-BNE	Impulse, Virgin Blue
MEL-BNE	Virgin Blue
BNE-ADL	Virgin Blue
SYD-OOL	Virgin Blue
MEL-ADL	Virgin Blue
SYD-ADL	Virgin Blue
MEL-CBR	Impulse
SYD-CBR	Impulse
BNE-TSV	Virgin Blue
MEL-HBA	Impulse

On the competitive routes listed above, Qantas load (measured in RPKs) increased 4.2%, while yields (expressed in cents per RPK) declined 18.5%.

While the impact on the non-competitive routes was more moderate than on the routes directly affected, it was still significant. On these routes, making up 49% of the Qantas domestic network, load increased 10.3% and yield declined 8.2% compared to the same period the year before. The non-competitive routes included flights to Perth (where yield fell 10.5%) and the Northern Territory (where yield fell 7.1%) for which the new airlines did not even offer an indirect alternative.

In addition, and importantly, while both Virgin Blue and Impulse provided only economy class products, their entry had significant impacts on business class yields. Qantas load (RPKs) on these routes declined 0.5% and yield (per RPK) declined 8.8%. The combination of declines in both load and yield meant that in the business cabin, revenue per unit of capacity operated (ASK) declined 17.1% during the period.

2.1.4 Rationalisation in ticket distribution

Finally, it is relevant to note trends in ticket distribution over the last decade. These changes, which reflect the widespread diffusion of the Internet and its ever growing attraction as a

distribution channel, have had the greatest impact on travel agents, traditionally the predominant distribution channel.

Requirement to reduce distribution costs

Key changes in the ticket distribution segment are being driven by airlines' attempts to reduce costs. According to the Air Transport Association, distribution costs are the fourth largest expense for carriers after labour, fuel and aircraft.[48] In order to achieve reductions in distribution costs, airlines are promoting more cost-effective means of distribution, in particular, their own Internet sites and call centres. Comments made by US airlines suggest that ticket distribution via the Internet, in particular, is significantly less costly than distribution via other channels, such as travel agents or their own reservation agents.[49]

Though FSAs have made increasing use of the Internet, the lower costs associated with relying on the Internet as a primary distribution channel are most clearly reflected in the business models of VBAs. At the same time, and related to their active promotion of the Internet as the basis for product distribution, VBAs are choosing not to pay commissions to either traditional and/or online travel agencies. The net impact is to lower product distribution costs, to some extent at the expense of travel agents.

It is clear that, for VBAs especially, the use of their own Internet sites as a primary distribution channel has been successful.[50] In Australia, one article reports that around 60% of Virgin Blue's

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48 TravelScene, *International Aviation News*, April 2002, http://www.travelscene.com.au/t042-apraviat.html.

49 washingtonpost.com, 2001, 'Airlines Push Web Booking To Cut Costs', Keith L. Alexander, August 22, http://www.washingtonpost.com/ac2/wp-dyn/A43770-2001Aug21?language=printer, which reports the views of Northwest Airlines and US Airways. See ABC Online, 2002, 'Internet booting travel agents out of airline business', 25 March, http://www.abc.net.au/news/business/2002/03/item20020323194342_1.htm, which reports the views of Delta.

50 CNET News.com, 2001, 'Continental axes Web travel commissions', Greg Sandoval, October 24, 2001, http://news.com.com/2100-1017-274880.html?legacy=cnet&tag=mn_hd.; and RyanAir.com

fares are currently booked over the Internet by consumers and agents.[51] Virgin Blue has previously stated:[52]

> With more than two thirds of direct sales and over half of travel agent sales generated through the net, Virgin Blue is second only to the UK's low fare carrier EasyJet, when it comes to Internet bookings.

The ACCC has noted in its draft determination in relation to the IATA Passenger Agency Program ('IATA PAP draft determination') that around half of all domestic air ticket sales are through airlines, either through call centres or via the Internet.[53] In the same determination, the ACCC also noted the views of travel agents that recognised the increased role of the Internet as a form of distribution, particularly for domestic air tickets.[54] In New Zealand, 29% of all domestic bookings have been through the Internet since the start of NZ Express, a significant increase on the 4% prior to NZ Express.[55]

Declining commissions

With changes in technology and cost pressures resulting in airlines becoming less reliant on travel agents, especially for distribution of domestic air tickets, there has been a trend towards

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news update (30 January 2001), http://www.ryanair.com/news/bday1.htmlm which note the achievements of Southwest and RyanAir, respectively, in distributing tickets via the Internet.

51 'Business Online, Trouble in Paradise', Kim Cotton, December 2001– January 2002.

52 Virgin Blue Press release, 2002, 'Virgin Blue Signs First Global Travel Distribution Deal: Airline Making Inroads in Key Government and Corporate Markets', 17 January, http://www.virginblue.com.au/news/jan2002.html.

53 ACCC, 2002, *Application for Revocation and Substitution of Authorisation A90408: International Air Transport Association (IATA) Passenger Agency Program*, 13 May, Authorisation No: A90791, File No: C2001/600 (IATA PAP draft determination), pp. 28 and 59.

54 IATA PAP draft determination, pp. 49 and 50.

55 This 4% figure was based on a July 2002 sample.

reductions in commissions for both traditional and online travel agents. This trend has been particularly evident in the United States.[56] Recently, each of the major US airlines has stopped paying 'base' commissions to US based travel agents for airline tickets.[57] Delta Airlines, which initiated the cuts, stated that a significant driver was the increasing migration to online bookings.[58]

However, other factors have, to some degree, offset the impact of the removal of base commissions. Delta, for instance, announced that it would continue to pay individually negotiated incentive commissions to select agents.[59] In addition, following moves by Continental and Northwest to cut commissions to online travel agents, Expedia and Travelocity entered into deals with the airlines to get paid on a performance basis or to buy tickets in bulk (referred to as the 'merchant model').[60]

In New Zealand, Air New Zealand has recently already removed base commissions for travel agents. Currently, Air New Zealand does not pay commissions to agents for internet bookings.[61] In Australia, the ACCC noted in its IATA PAP draft determination that declining commissions was a trend observed by the Australian Federation of Travel Agents (AFTA).[62] The ACCC also

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56 http://news.com.com/2009-1017-253373.html?tag=bplst; wired.com, 1998, 'Online Travel Flies, with Cabin Pressures' Scott Kirsner, March 13, http://www.wired.com/news/business/0,1367,10899,00.html; travelbiz.com.au, 2001, 'Northwest and US Airways join US commission caps', 27 August, http://www.travelbiz.com.au/articles/7e/0c006b7e.asp; washingtonpost.com, 2001, *op. cit*.; CNET News.com, 2001, *op. cit*.

57 ABC Online, 2002, 'Internet booting travel agents out of airline business', 25 March, http://www.abc.net.au/news/business/2002/03/item20020323194342_1.htm.

58 ibid.

59 CNET News.com, 2002, 'Delta cuts commissions to travel agents', Greg Sandoval, March 14, http://news.com.com/2100-1017-860323.html.

60 CNET News.com, *op. cit* .

61 xtramsn, 2002, 'Fare Deal For Business Travellers', Denise McNabb, *The Independent*, 17 April, http://xtramsn.co.nz/business/0,,5008-1307117,00.html.

62 IATA PAP draft determination, p. 41.

noted the view of The Flight Centre that commissions for domestic sales were particularly low.[63] However, Qantas has publicly stated that it does not intend to reduce base commissions, and sees travel agents as its primary distribution channel.[64]

Unsurprisingly, the growth of lower cost distribution channels has precipitated significant rationalisation and consolidation among travel agents, a worldwide trend that has impacted on travel agents in New Zealand and Australia.[65]. In our view, what is important in assessing the Alliance is that any competitive impacts arising from the Alliance on ticket distributors need to be distinguished from these broader trends in travel agency commissions and industry consolidation in the Australia–New Zealand region.

Future role of travel agents

While there has been a significant trend towards airlines reducing their reliance on travel agents as a result of both changes in technology and attempts by airlines to reduce distribution costs, there is a view that the extent to which the Internet can be used as a viable alternative to travel agents has its limits, and hence, there will always be a role for the travel agent. IATA holds this view,[66] and in Australia, the ACCC has previously expressed a similar view.[67]

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63 ibid, p. 50.

64 Travelbiz.com.au, 2002, 'Agents increase share of QF business', 29 July http://www.travelbiz.com.au/articles/69/0c00f769.asp.

65 With respect to rationalisation in the New Zealand travel agency industry, see Travel Online, 'Travel flies to the net', NZ *Herald* article, 29 January 2000, Karen Scherer http://www.travelonline.co.nz/press/herald-29jan.html. For an illustration of rationalisation in the Australian industry, see travelbiz.com.au, 2002, 'Not a happy New Year for agents forced out of TCF', 5 April, http://www.travelbiz.com.au/articles/51/0c00c451.asp. In addition, see the view expressed by the CEO of the Travel Compensation Fund, as summarised in the ACCC's IATA PAP draft determination, pp. 31–2.

66 IATA, 'Annual Report', 1998.

67 ACCC, 1997, 'ACCC not to oppose acquisition of travel agent', 2 March, http://www.accc.gov.au/media/mr1997/travel.htm.

This may well be the case, particularly for international travel. In Australia, a July 2002 article reports that travel agent sales account for around 70% of Qantas revenues, with agents accounting for 82% of international revenues.[68] As noted above, Qantas has publicly stated travel agents will continue to be its primary form of ticket distribution. In New Zealand, one article reports that 80% of all international bookings are made through agents or wholesalers.[69] Hence, while the Internet may increasingly reduce the role of travel agents in the longer term, particularly in the distribution of domestic tickets, travel agents are likely to maintain a significant role in the distribution of international tickets, at least in the short to medium term.

However, it is unlikely that this role will simply involve the distribution of tickets. To be viable, agents will have to provide services that go beyond mere ticket acquisition – services that may involve the integrated planning and purchase of travel, the control of travel costs, or the arrangement and rearrangement of complex itineraries. This would be consistent with the observed trend that travel agencies are being used mainly for the purpose of arranging more complex international travel as compared with domestic travel.

These services are increasingly likely to be paid for by the customer, rather than by the carrier – reflecting the fact that it is the customer that is best placed both to value the service and to monitor the efficiency with which it is performed.[70] By shifting into these services, agents will continue to play an important role, but one which is likely to be significantly more confined, at least in terms of the aggregate volume of resources consumed, than it was in the past.

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68 Travelbiz.com.au, 2002, 'Agents increase share of QF business', 29 July http://www.travelbiz.com.au/articles/69/0c00f769.asp.

69 xtramsn, *op. cit.*

70 Obviously, all services are ultimately paid for by customers. However, the issue is where in the chain of transactions responsibility is placed for directly paying for any charges incurred. Economic analysis suggests that this responsibility ought to be placed with the party that can best value the service provided and monitor the efficiency with which it is supplied. For ticket sales, it is not inefficient for this responsibility to lie with airline carriers. For services that are 'customised' to the needs of individual customers, it is more efficient for the customer to have responsibility for contracting for, and hence directly paying for, the service.

This outcome is in no sense unusual. Historically, changes in the technology of distribution have always been accompanied by significant changes in the pattern of distribution channels – the dramatic decrease in intermediation that accompanied the growth of supermarkets as a primary means of distribution of groceries (which in turn reflected the ever more widespread availability of cars, and suburbanisation generally) being an obvious case in point.[71] Equally, across a wide sweep of industries, the growth of the Internet is changing distribution channels, especially for goods which do not require physical delivery.[72] Inevitably, adjustment costs are imposed on distribution resources that are no longer needed, but the efficiency gains improved distribution permits should be welcomed by policy-makers, as they are the basis for durable improvements in consumer welfare.

2.2 Market definition

In defining the relevant markets, it is important to recognise that, ultimately, our purpose is to evaluate the net benefits of the Alliance. Hence, markets should be defined in a manner that best assists in this process. Taking a purposive approach to market definition is consistent with the traditional approach to defining markets in Australian trade practices law.[73]

There are several dimensions to a market: the product, customer, functional, geographic and temporal dimensions. We focus on the first four dimensions in our analysis.[74]

The economic basis upon which we delineate the relevant markets is based on the approach of analysing demand and supply side substitution. However, we also consider the commercial reality in which airlines operate, especially the global trends affecting the airline industry discussed in section 2.1. This approach recognises that a strict application of tests for demand and

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71 Jones, K. & Simmons, J. 1990, *The Changing Retail Environment*, Routledge, London, p. 137ff.

72 Hall, R. E. 2001, *Digital Dealing*, Norton, New York.

73 ACCC, 1999, *Merger Guidelines*, June, para 5.41.

74 While we do not define a separate temporal aspect to the market, our analysis reflects the changing dynamics of the markets over time. For instance, the discussion above concerning the increased coordination amongst airlines is suggestive of market boundaries changing over time.

supply side substitution, such as the SSNIP test, may not always accurately expose the relevant arena of competition between firms.[75]

Overall, our views as to the relevant markets do not significantly impact on our evaluation of the net benefits of the Alliance. The following sections merely summarise our views on the relevant markets in which to assess the competitive effects of the Alliance. A more detailed analysis is contained in Appendix A.

2.2.1 Air passenger services market

We believe that there is a product market for air passenger services, which does not include the provision of other passenger services using other modes of transport. This view is consistent with that of the NZCC in its determination regarding the proposed merger between Air New Zealand and Ansett ('Bodas determination').[76]

Customer markets

Within the air passenger services market, our view is that there are no separate customer markets. Our view is consistent with that expressed by the NZCC in its Bodas determination, where it did not define separate customer markets or submarkets, despite recognising that there may exist

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75 Smith, Rhonda & Walker, Jill, 'The role of commercial reality versus substitution in Market Definition', *Competition & Consumer Law Journal*, vol.5, no.1, August 1997, pp.1–21. The SSNIP test is a formal approach to analysing demand and supply side substitution, and has been endorsed by both the ACCC and NZCC in their respective merger guidelines as a helpful analytical framework for defining markets in many situations. See ACCC, 1999, *Merger Guidelines*, June, para 5.46; and NZCC, 2001, *The Commission's Approach to Adjudicating on Business Acquisitions Under the Changed Threshold in Section 47 – A Test of Substantially Lessening Competition*, Practice Note: 4, pp. 22–4. Conceptually, the SSNIP test approach aims to define the market as the smallest area over which a hypothetical monopolist could profitability impose a small but significant and non-transitory increase in price (SSNIP).

76 New Zealand Commerce Commission, Decision No. 278, 3 April 1996 ('Bodas determination'), para 146.

distinct customer segments.[77] However, our view may not be consistent with comments made by the ACCC in its RJSA determination, where it remarked that 'a single air transport market for economy and premium class passengers can no longer be assumed.'[78]

Our view is that there are no separate customer markets for the following reasons:

- *Supply side complementarities.* There are likely to be economies of scope associated with servicing a wide range of customers with different demand profiles, as compared with specialising in serving only one type of customer. Serving a wide range of customers facilitates price discrimination, thereby maximising contributions to fixed costs. As a matter of commercial reality, this greatly strengthens the incentives airlines have to compete across customer segments, and hence makes it artificial to regard these segments as distinct markets.

- *The relative sizes of the markets.* In relatively small markets, such as the markets in which domestic Australian, domestic New Zealand and Tasman services are provided, the size of the overall market may necessitate the targeting of a broad range of customers. Virgin Blue's targeting of business customers in Australia (noted in section 2.1.3), is certainly consistent in this respect.

- *Supply side substitution*. This is most evident within the economy class cabin, where the reallocation of seats that occurs is the essence of yield management. The specialised assets required to provide a specialised business class cabin do not appear to be so significant as to prevent supply side substitution between economy and business class services. Given the ease of supply side substitution, there is no reason to believe that if there were significant margins to be made over marginal cost by providing a specialised business class cabin, an economy class-only airline would not seek to do so.

- *Demand side substitution*. On the demand side, we have performed a Critical Loss Analysis (CLA) to demonstrate that economy and business class fares are in the same market, and hence, all customers are in the same market. Our full analysis is presented in Attachment

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77 Bodas determination, paras 121–5.

78 RJSA determination, pp. 47–9. This view has been reaffirmed in its IATA PAP draft determination(see, pp. 56–7).

A of Appendix A. In simple terms, the results of our CLA analysis demonstrate that a SSNIP by a hypothetical monopoly supplier on business class fares for Tasman and domestic New Zealand routes would be unprofitable as a result of substitution to economy fare classes on the same aircraft and to rival carriers operating economy class-only flights on the same routes. Our analysis is consistent with the observed impact of Virgin Blue's entry on Qantas business yields noted in section 2.1.3, which highlights the existence of an unbroken chain of substitution.

Functional markets

Consumers are increasingly purchasing airline tickets directly through airline call centres and internet sites. This has been especially the case for the purchase of domestic air services. Given the scope for consumers to purchase through these distribution channels as well as other channels such as wholesale and retail travel agents, our view is that there are no distinct functional layers within the air passenger services market. This is consistent with the approach that has previously been taken by the ACCC.[79]

2.2.2 Air freight services market

Taking a conservative approach to defining markets, we believe that there is a product market for domestic and international airfreight. Our view is based on similar considerations to those noted by the NZCC in its Bodas determination and the ACCC in its RJSA determination.[80]

Our view is that there is a continuum where, at one extreme, there is freight that is highly non-time critical. Delivery by a range of transport modes, including delivery by sea, may be viable. At

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79 In its SQ/AN/NZ determination, the ACCC noted that consumers could purchase tickets from any segment of the distribution system, including from travel retailers, travel wholesalers, and directly from airlines. See RJSA determination, p. 44. This view was reaffirmed in its RJSA determination, where the ACCC noted that consumers viewed airlines as an alternative source of tickets to travel agents. See RJSA determination, pp. 50–1. A similar view has been expressed in its IATA PAP draft determination, p. 59.

80 Bodas determination, para 149; and RJSA determination, p. 50.

the other extreme, there is freight that is time critical. In these instances, only certain types of transport may be viable as modes of delivery, including delivery by air or, where feasible, rail delivery or "door to door delivery" by road. Consistent with this, our view is that air freight services are likely to be included in a market for time critical freight.

While we believe this to be the relevant market in which freight services are provided, we proceed on the basis that air freight services are provided in a distinct market. This approach will obviously be conservative (i.e. overstate competitive effects arising from the JSA) due to the scope for rail and road delivery to provide alternative modes of transport in some instances. However, proceeding on this basis simplifies our analysis significantly.

Confining the market to only include air freight services, competitive effects are likely to be largely revealed in our analysis of air passenger service markets. As the Productivity Commission (1998) has previously noted, around 90% of international air freight is carried in the bellyholds of air passenger aircraft.[81] This is also consistent with the data we have obtained, which indicates that, in the 12 months to December 2001, 85**%** of Tasman air freight was carried in passenger aircraft bellyholds.[82]

This approach will likely overestimate detriments. Aside from the point noted above that other modes of transport, such as road freight, may constrain air freight services in some instances, specialist air freight operators are active in a wide range of markets. In addition, as discussed in section 2.4, entry and expansion barriers into air freight markets are low. As a result, there is a high likelihood that expansion by these service providers could defeat an attempted price increase on freight by passenger airlines. Finally, the transportation of freight is likely to be more conducive to indirect routing than the transportation of air passengers. As the ACCC has noted, provided cargo arrives on time and in good condition, the precise means by which the cargo is transported to its destination is irrelevant.[83]

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81 Productivity Commission, 1998, *International Air Services*, September, p. 24.

82 Bureau of Transport and Regional Economics. The proportion of air cargo carried by passenger operators from New Zealand to Australia was approximately 88% for the 2001 calendar year, slightly higher than the corresponding proportion for air cargo carried from Australia to New Zealand, which was 83%.

83 RJSA determination, p. 43.

2.2.3 Geographic markets

For both air passenger and freight services, we believe there is a single market that includes air passenger services provided in New Zealand, Australia and on the Tasman. Alternatively, there are three separate markets for New Zealand domestic services, Australian domestic services and Tasman services. Within the domestic New Zealand market, we believe it is helpful to distinguish between main trunk services, similar to the approach taken by the NZCC in its Bodas determination.

We also believe that there is a market for Pacific Island services.[84] We do not have a firm view on the relevant markets in which services along other directly affected international routes are provided, nor do we believe that such a view is required to assess the issues raised in the matter at hand. We analyse these routes on a city pair basis, namely Sydney–LA, Auckland–LA, Nadi–LA, and Papeete–LA.

While the geographic market definitions aim to capture trends in aviation markets, particularly the deregulation in airline markets and increased airline coordination discussed in section 2.1.1 and 2.1.2, in reality, the boundaries of geographic markets may be blurred. For instance, the increased coordination amongst airlines and network-based competition discussed in section 2.1.2 suggests a broadening in the scope of geographic markets over time. It is important to note that our overall evaluation of the competitive detriments arising from the Alliance does not hinge on the precise delineation of geographic markets.

Despite the fact that our analysis does not hinge on our market definitions, when considering the markets in which air passenger services are provided in Australia, New Zealand and on the Tasman, it is important to consider matters from the perspective of commercial reality.

While it could be argued that there are three distinct markets for air passenger services provided in New Zealand, in Australia, and on the Tasman, respectively, it is clear that both Australian and New Zealand carriers have placed considerable stress on the importance of providing service throughout the area, despite the substantial costs (and in the case of Air New Zealand's investment in Ansett, large losses) this involves. Interlining benefits may have been a factor in the

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84 We note that the majority of travellers to Pacific Islands are likely to be leisure passengers with high cross-elasticity of demand with respect to other holiday destinations, such as Maldives or Cairns. Therefore both the product and geographic dimensions of the market may be broader.

short term, but long term considerations – perhaps best described as a view that the relevant segments of the market are merging – have undoubtedly dominated. We consequently believe that commercial reality is best captured by considering these markets as integrated.

Despite our view that broader markets are useful, so as to be conservative, our analysis of competitive detriments is performed both on a city-pair basis for those routes directly affected by the Alliance and for broader aggregations (see section 4.2).

2.2.4 Other relevant markets

It is relevant to consider the market in which travel agency services are provided. In many instances, air tickets form part of the overall package that consumers purchase from travel agents. However, travel agents play, and will likely continue to play, a quite distinct role from airlines. They are providers of assortments, bringing together a number of disparate elements required by consumers as part of a total travel package, including accommodation, car hire and other ground transportation and tours, as well as airline transport and advice on what products might best suit their needs. As discussed in section 2.1.4, as the role of travel agents in the provision of simple ticket sales declines, the provision of these value-added services will become an increasingly important part of a travel agent's business.

For the purposes of this report, we define the market for travel agency services to be a value-added market in which travel agents supply an assortment of travel-related products, including airline tickets, package these products and provide advice to consumers. Defining this market enables us to consider the extent to which competition in the provision of travel agency services might be directly affected through an increase in market concentration. It also enables to consider the extent to which increased concentration in air passenger service markets might facilitate the exercise of market power against travel agents.

In addition, it may be relevant to consider the markets in which inputs into air service markets are provided, particularly 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.

These markets are relevant in considering the potential for foreclosure to air passenger service markets. Air passenger service markets 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.

2.2.5 Relevant markets in which to assess public benefits

The public benefit test relates to the overall impact on the public in the country at issue: in the Australian context it is the impact on the Australian public that is at issue and so the benefits accruing in New Zealand are not relevant to the Australian analysis and vice-versa. Hence, for the purpose of considering public benefits, we view each national context as standing alone.

Having said that, the high level of economic integration between Australia and New Zealand facilitated by agreements such as the Closer Economic Relations (CER) agreement, and more generally, the close ties between these countries, should lead to some weight being placed in each country on benefits secured in the other. Nonetheless, we have not placed any such weight on external impacts in the formal analysis.

2.3 Competitive effects in air passenger services markets

In evaluating the competitive effects arising in the markets defined in the previous section, it is relevant to consider the following:

- market concentration;
- entry and expansion barriers, and more importantly, the *likelihood* of airline expansion; and
- vertical relationships between the members of the Alliance and upstream and downstream service providers.

Our analysis focuses mainly on competitive effects as they relate to the domestic New Zealand and Tasman air passenger routes, since the Alliance will alter the structure of competition along these routes more than any others. However, a full competitive assessment of the Alliance would take account of the continuing integration of aviation markets on a global basis. The liberalisation of air travel and the increasingly international nature of demand mean that airlines increasingly view the arena of competition as being far wider than traditional anti-trust markets. Nonetheless, the evaluation of the Alliance set out here is somewhat narrower, and more closely aligned with the market definition and analysis approach adopted in the ACCC and NZCC merger guidelines.

2.3.1 Market concentration

The Alliance will result in increases in market concentration along directly affected routes beyond the market-share safe harbours outlined in the ACCC and NZCC merger guidelines, except the sole Atlantic route considered, LAX–LHR.[85] Table 4 presents the market shares, three and four firm concentration ratio (CR3 and CR4) arising from the Alliance for directly affected routes. While we believe that Tasman and domestic New Zealand routes are part of a single Australia–New Zealand market, market concentration ratios are presented separating for Tasman and domestic New Zealand routes. Appendix B presents the market shares, CR3 and CR4 arising from the Alliance for directly affected routes at the city-pair level.

85 The NZCC and ACCC safe harbour tests recognise the potential for the exercise of both unilateral and coordinated market power. The NZCC outlines two safe harbour tests: (1) where the three-firm concentration ratio (3CR) in the relevant market is below 70%, and the combined entity has less than a 40% share; or (2) where the 3CR is above 70%, and the market share of the combined entity is less than 20%. See NZCC, 2001, *The Commission's Approach to Adjudicating on Business Acquisitions Under the Changed Threshold in Section 47 – A Test of Substantially Lessening Competition*, Practice Note: 4, p. 28. The ACCC will have concerns if a merger results in a four firm concentration ratio (4CR) of 75% or more and the merged firm will supply at least 15% of the relevant market; or if the merged firm will supply 40% or more of the market. See ACCC, 1999, *Merger Guidelines*, para 5.95.

Table 4: Alliance market share, 3CR and 4CR: June 2002 to June 2003

	ANZ / SJ / QF / FJ	3CR	4CR
Tasman	85%	92%	96%
Domestic	95%	100%	100%
Short-haul Pacific	70%	81%	90%
Asia	64%	97%	100%
Long-haul Pacific	73%	93%	97%
Atlantic	17%	78%	90%

Notes: Market shares based on forecast capacity for the June 2002 to June 2003 period. Air New Zealand data includes Freedom Air, while Qantas data includes Air Pacific. Air New Zealand data includes United for the Auckland–LA route.

Though the relevant thresholds are exceeded, this in itself does not demonstrate that the Alliance will impact on the performance of affected routes. However, it does suggest that a consideration of other factors, such as expansion barriers and vertical relationships, is required, which we discuss in the following sections.

2.3.2 Barriers to entry and expansion

In its RJSA determination, the ACCC reiterated its view that there were regulatory and commercial barriers to entry to both international and domestic markets, including those relating to capital requirements, the availability of capacity and access to airport facilities.[86] In its Bodas determination, the NZCC formed the view that a new entrant would face entry barriers to the domestic New Zealand market regardless of whether entry was in the form of FSA or VBA,

86 RJSA determination, p. 57.

pointing to the lack of observed entry since Ansett NZ in 1987, and that Ansett NZ's entry had been marked by years of sustained losses.[87]

However, the NZCC also believed that entry barriers were not significant for Tasman and other international routes. In considering conditions of entry for Tasman routes, the NZCC noted that regulatory barriers were not an issue, while there did not appear to be significant barriers to entry arising from access to inputs (including terminal facilities) for either a VBA or FSA.[88] In assessing conditions of entry for international air passenger services markets other than the Tasman, the NZCC considered designation and access to capacity as relevant factors.[89] The NZCC did not consider designation to be an entry barrier, though it did believe that access to capacity on some routes might be a problem for an entrant. Importantly, however, the NZCC noted that these issues would not arise with respect to Australia and the US routes since bilaterals allowed for unrestricted capacity.[90]

While it is important to consider the factors that give rise to the overall level of entry barriers, in this instance it is more important to evaluate the likelihood of entry defeating any attempted exercise of market power by the Alliance. In other words, an essentially abstract consideration of the height of barriers cannot be determinative if entry is highly likely to occur as a matter of commercial reality.

If entry is to occur, this would most likely be in the form of an existing airline expanding operations within the Australia / New Zealand region rather than *ex novo* entry. Because of this, if anything, it is most relevant to consider *expansion* as opposed to *ex novo* entry barriers.

As stated in section 2.2.3, our view is that there is a single market that includes services provided in New Zealand, Australia and the Tasman. For this reason, the analysis of expansion barriers considers the ability for an airline operating within this Australia / New Zealand market to expand output so as to constrain the pricing conduct of the Alliance.

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87 Bodas determination, p. 58.

88 ibid, p. 67.

89 ibid, p. 69.

90 ibid, p. 69.

However, if there were deemed to be separate markets for services provided in New Zealand, Australia and on the Tasman, then an analysis of expansion barriers ought to capture ease of adjacent market entry. That is, an analysis of expansion barriers with respect to the New Zealand domestic main trunk market ought to capture the ability for airlines operating on Australian domestic and Tasman routes to expand output so as to constrain the pricing conduct of the Alliance on New Zealand domestic main trunk routes.

The factors most relevant in assessing entry and expansion barriers in this instance are considered in the following sections.

Legal and regulatory restrictions

Legal and regulatory restrictions relating to freedom rights, foreign ownership restrictions, and the requirement to secure an air operating certificate are unlikely to pose an expansion barrier.

With respect to freedom rights, as noted in section 2.1.1, the Open Skies agreement between Australia and New Zealand allows for authorised airlines to fly unrestricted between Australia and New Zealand, and to operate domestically within Australia and New Zealand. While ownership and control restrictions could, in theory, restrict entry or expansion, we do not believe it plausible to claim that the respective governments would, as a matter of fact, restrict entry on the grounds of foreign ownership.

Furthermore, as to Tasman services, a number of carriers have beyond (fifth freedom) rights, which they use to provide services between New Zealand and Australia. These include Asian carriers such as Thai International, Malaysian Airlines and Garuda. In addition, there are other airlines that have fifth freedom rights that are not currently exercised, for instance United Airlines. These fifth freedom carriers represent a substantial competitive factor and there remains scope for further expansion by one or more of these carriers. The level of competitive discipline that fifth freedom carriers impose is substantially greater than their market shares suggest. Fifth freedom carriers have the choice of either leaving their aircraft on the ground in Australia until they are ready to fly out of Australia to coordinate with the schedules in their respective hubs or they can run a tag flight between Australia and New Zealand on free aircraft time. As there is no opportunity cost in terms of the use of the aircraft (it would otherwise sit on the ground in Australia) the fifth freedom carriers only need to recover variable costs to make the flight viable. This allows them to offer very low fares and gain significant market share.

Finally, with respect to services between New Zealand and the US, there is an Open Skies agreement between the two counties.[91]

Sunk costs

In its Bodas determination, the NZCC considered sunk costs to provide incumbents with advantages.[92]

Sunk costs can provide incumbency advantages, particularly when considering ex novo entry. However, any barriers raised are lessened by the fact that, for domestic New Zealand and Tasman routes, a small number of routes account for a substantial portion of overall market revenues: Just four routes – AKL-SYD, AKL-MEL, AKL-BNE and CHC-SYD account for 77% of all passengers flown on all primary Tasman routes. Furthermore, just three routes – AKL-WLG, AKL-CHC, and WLG-CHC – account for 94% of all domestic New Zealand air passenger traffic on primary routes. Ceteris paribus, a requirement to develop a relatively modest, yet ostensibly viable, route structure would also moderate capital needs for any entrant.

However, expansion barriers are likely to be low. Sunk costs associated with entry on the Tasman would be low for a VBA that had already established a presence in the Australian market. There would, in particular, be few investments required to invest in developing a management, administration and marketing infrastructure, as the existing assets used to provide these functions in Australia could largely cater to the needs of the cross-Tasman service (though there would be some investments of this type required in New Zealand). The same would be true for engineering and similar services, consistent with the discussion in section 2.3.4.

Capital costs

It has been argued that there is a cost asymmetry between entrants and incumbents arising from the higher costs of capital borne by entrants arising from the risk of failure. Whether or not this is true depends on whether there are imperfections in capital markets. Regardless of this, it is clear

91 Though substantial national ownership and effective control requirements apply.

92 Bodas determination, p. 44.

that for a successful existing player in the Australia–New Zealand region, with a business strategy that has proven to be profitable, any asymmetries would be limited.

Economies of scale and scope

Network and density economies can provide some advantage to incumbents in the relevant markets.[93] Again, for the domestic New Zealand and Tasman markets, these economies may be lessened by the fact that the city-pairs in question are essentially point-to-point as well as by the fact that a small number of routes account for a substantial portion of overall market revenues, as discussed above.

In contrast, in the denser continental markets – such as the US, and to a lesser extent, Europe – complex and interleaving route structures create scope for economies to be achieved by organising traffic around hub and spoke networks. Control of a major hub can then confer an advantage to an incumbent carrier, as an entrant, to compete, would need to replicate a substantial infrastructure providing and carrying feeder traffic. This could require substantial sunk costs.

Even so, control over 'fortress hubs' has proved of relatively little use to incumbent airlines in preventing VBAs from making very substantial competitive inroads. Where city-pairs are of sufficient size to sustain direct service, VBAs have managed to bypass hubs, and indeed, have gained some marketing advantage by reducing the time passengers would otherwise have to spend in transit.

That said, an airline's access to feeder traffic – for example, from minor routes in Australia to and from the Tasman route – could have an effect on its ability to achieve economies of density. In that event, an entering or expanding airline, absent effective interlining arrangements, might need to incur some cost disadvantage (by foregoing economies of density on the routes it served) or would have to enter both the Tasman and the minor routes simultaneously. It is likely that the sunk costs associated with such two-level entry would be high.

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93 Network economies are the cost savings accruing from network size, and the spreading of fixed costs associated with this size over significant quantities of output. Economies of density refer to cost savings accruing from running more traffic over any given route. These economies can arise, for example, from the ability to use larger aircraft with lower unit costs as load rises.

The extent to which this is an issue in practice depends on the importance of feeder traffic on the routes affected by the Alliance. As discussed in section 2.3.3, this is likely to differ between an FSA and VBA.

Access to landing slots and terminals

The NZCC did not see the availability of landing slots as a deterrent to entry in its Bodas determination.[94] At the time of its Bodas determination, the NZCC expressed some concern over the ability to obtain access to slots at Auckland and Wellington airports during peak periods and inclement weather.[95] The NZCC noted that, during such periods of disruption and delay, smaller airlines tended to suffer, since priority was given to jet aircraft. With respect to Auckland, the NZCC noted that, in future, very small aircraft might be restricted in their use of Auckland Airport.

Currently, there are no congestion problems at Christchurch Airport.[96] AIAL has also stated that congestion is only an issue at peak times.[97] However, the combination of bad weather, topography and aircraft capabilities creates problems at Wellington Airport and, in future, such problems may increase due to traffic growth.[98] The Traffic Capacity Forum, formed in 1996 and which involves Airways New Zealand, airlines and New Zealand's airport companies, deals with such issues, and new software has recently been introduced at Wellington Airport to manage aircraft flows, and is to be introduced at Auckland Airport.[99]

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94 ibid, p. 50.

95 ibid, p. 49.

96 Christchurch International Airport Limited, 2001, *Response to Commerce Commission Critical Issues Paper*, 27 April, p. 34.

97 Auckland International Airport Limited, 2001, *Submission to Commerce Commission*, 27 April, p. 33.

98 Wellington International Airport Limited, 2001, *Submission To The Commerce Commission In Respect Of The Commission's Price Control Study Of Airfield Activities*, 27 April, Appendix 6(c).

99 www.airways.co.nz/documents/2001AR_3.pdf.

In Australia, Sydney Airport does have landing slot congestion at times, largely due to its jet curfew, which is effective between 2300 and 0600. However, advice from the Airport Co-Ordination Authority suggests that an entering or expanding airline onto Tasman routes would be unlikely to have difficulties obtaining landing slots.

With respect to terminals, the view expressed by the NZCC in its Bodas determination was that the ability for a new entrant to obtain domestic terminal access at the major airports in New Zealand would differ depending on whether domestic entry was in the form of FSA or VBA. While it appeared to form the view that access to domestic terminals might well be an issue for FSAs, it noted the views of the airports that VBAs could be accommodated with little difficulty.[100] There have been no changes with respect to the scope for entrants to access terminals since this determination except that Qantas currently occupies space that was previously held by Ansett NZ. In Australia, there do not appear to be any difficulties in obtaining access to international terminal space.

Despite the fact that an airline would unlikely be constrained from entering or expanding onto the Tasman or onto New Zealand main trunk routes due to difficulties in accessing landing slots or terminals, we note that the Alliance parties are willing to submit undertakings to facilitate entry and expansion should the Commission deem that these are necessary.

Brand loyalty

Both Air New Zealand and Qantas are likely to have branding and reputation advantages arising from their country's flag carrier status, and their sound safety records.

However, experience shows that VBAs such as Virgin Blue in Australia and EasyJet in Europe have had little difficulty in establishing very strong brand presence. Additionally, as noted in section 2.1.3, the US experience has tended to be that incumbents have sharply dropped fares in response to VBA entry. This has also been the case with the recent VBA entry into Australia.

This suggests that any such barriers relating to brand and reputation may well be limited, if not for potential FSA entrants, then at least for potential VBA entrants. This would be especially so for an airline operating in Australia expanding onto Tasman or domestic New Zealand routes, which

100 Bodas determination, p. 48.

would likely face low hurdles in terms of overcoming branding advantages owing to the close economic and cultural ties between Australia and New Zealand.

It may also be case that switching costs associated with frequent flyer programs are not as significant as has been presumed (though they are likely to have some impact on initial entry costs). In Australia, the collapse of Ansett has meant many travellers have not had sufficient time to build a large inventory of air points on other Australasian carriers. These passengers would be especially important to any Tasman entrant. Any switching costs would be low for these customers. Also, the presence of Virgin Blue in Australia and Origin Pacific in New Zealand, as well as United Airlines and its Star Alliance partners (especially Singapore Airlines) as feeders of international traffic in both countries provides opportunities for any entrants to tap into pools of passengers that have less or no loyalty to the Qantas or Air New Zealand brands.

More significantly, data on air passenger traffic indicates that passenger participation in frequent flyer programs is not so widespread that it would represent a high barrier to entry. Only 29% of all Qantas passengers on Tasman flights in the year ending May 2002 even participated in Qantas's frequent flyer program. Only about one-third of these program members (or about 10 per cent of all passengers) had achieved any of the 'status' levels associated with moderate levels of participation.[101] For Air New Zealand over the same routes and time period, the results were similar, with only about 21% of all passengers participants in the airline's frequent flyer program and only about one-third of participants having achieved any but the lowest 'status' level in that program.[102]

Again, it is necessary to distinguish the importance of frequency flyer programs for VBAs as compared with FSAs. In particular, VBAs such as Virgin Blue have actively marketed the

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101 That is, only about 36%of the passengers that were members of the Qantas frequent flyer program had achieved at least 'Silver' status (which requires about 5 to 30 one-way flights per year). The remaining 64% qualified for 'Bronze' status, which requires only that they be members of the program.

102 That is, about two-thirds of participants who flew on the airline's Tasman flights during the period had achieved only the 'Jade' status level, a level that requires no flights at all for qualification.

advantages associated with not operating frequent flyer programs and airline lounges. For instance, the Virgin Blue website boasts:[103]

> What you won't find in our low fares …
>
> The cost of airline lounges and frequent flyer programs.
>
> Expensive add-ons such as these are hardly essential during a short commute. Instead, we focus on giving you true service. Like a dynamic, service-minded crew and the most qualified pilots in Australia.

Finally, perhaps the greatest illustration that branding and reputation advantages do not impose a significant barrier to entry is the collapse of Ansett. Despite Ansett having both a strong brand and a frequent flyer program, this was not sufficient to insulate it from the forces of intense price competition that arose, particularly from VBA entry.

The history of entry and exit in the relevant markets

In considering entry barriers and likely entry, both the NZCC and ACCC consider the history of entry and exit to be relevant.[104]

In Australia, since the removal of the domestic 'two airlines' agreement favouring Ansett Airlines and the government-owned Australian Airlines in 1990, entry has occurred on several occasions, and though most entrants have been unsuccessful (e.g. Compass, Compass II and Impulse), there is at least one instance of significant success, namely Virgin Blue. In New Zealand, there have been failures (e.g. Ansett NZ, Tasman Pacific Airlines), though Origin Pacific Airways and Qantas continue to operate. On the Tasman, there has been significant fifth freedom activity. Kiwi International also operated on the Tasman from late 1994 before it went into liquidation in 1996.

In summary, the Australia-New Zealand market has seen entry and expansion by VBAs, with Virgin Blue's entry into Australia being especially successful. However, there is also a record of failure by entrants and even by a seemingly entrenched incumbent.

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103 http://www.virginblue.com.au/.

104 NZCC, 2001, p. 38; and ACCC, 1999, para 5.128.

Barriers to entry and expansion: summary

Overall, competition in airline markets is capable of being extremely 'tough', in the sense of driving prices to very low levels, and hence can impose great strains on firms that are weak either in financial terms or in terms of the quality of their management. When this happens, sizeable losses can be accumulated in relatively short periods of time. The risk this involves may weigh especially on entrants not in a position to adopt an incremental, 'toe in the water', approach to entry.

However, as summarised above, despite these potential impediments, the NZCC has previously found entry barriers onto Tasman and international routes to not be significant. Our analysis above also demonstrates that expansion barriers for an airline already operating in the Australia–New Zealand region are likely to be low.

A more important consideration in assessing the impact of the Alliance is whether entry is *likely*. To be specific, when considering entry and expansion barriers, while it is important to consider the factors that combine to give rise to the overall level of barriers (such as those listed above), it is more important to evaluate whether the likelihood of entry and expansion defeating any attempted exercise of market power by the Alliance. As we demonstrate in section 2.3.5, in this instance, an abstract consideration of the height of barriers is not especially relevant given that entry is highly likely to occur as a matter of commercial reality.

2.3.3 Access to feeder services

The view could be put that Air New Zealand and Qantas benefit from feeder traffic from other domestic routes for Tasman traffic and, in Air New Zealand's case, domestic traffic on its trunk routes. In its Bodas determination, the NZCC considered the ability of a domestic New Zealand entrant to access feeder traffic from provincial or tourist centres, though did not see this as a significant competitive concern:[105]

> A high proportion of the total population is concentrated in the three main centres – Auckland, Wellington and Christchurch. Traffic from provincial and tourist routes moving onto main trunk services is not a substantial proportion of total main trunk

[105] Bodas determination, p. 52.

> traffic. Information available to the Commission suggests it is less than one-sixth. While access to feed is important, the Commission does not see it as critical.

Likewise, the NZCC also considered the ability for a domestic New Zealand entrant to obtain feed from international arrivals, though again did not see any significant concerns in this respect:[106]

> Feed from international arrivals is another factor. When Qantas sought a shareholding in Air NZ in 1989, Ansett NZ submitted that a loss of feed from Qantas' international flights would threaten its viability. The Commission concluded that it would not. International feed accounted for a relatively small amount of domestic traffic (around 10%) and there were other airlines flying into New Zealand, although their combined volumes were much lower than for Qantas and Air NZ.

Both Air New Zealand and Qantas have gained important advantages through feeder traffic from other domestic routes for Tasman traffic and, in Air New Zealand's case, domestic traffic on its trunk routes. This feeder traffic is significant and might well place a potential FSA entrant, in particular, at some disadvantage. For example, Qantas estimates that about 42% of its Tasman traffic are interline passengers from its own or another airline network (with more than 90%of interline passengers fed from other Qantas flights).

Offsetting this advantage, to some extent, there are opportunities to form alliances with existing services provided by independent carriers to provide feeder traffic for both Tasman and domestic New Zealand traffic. Passenger feeds from Virgin Blue could potentially provide a trans-Tasman carrier with domestic Australian traffic to and from trans-Tasman services.[107] A domestic New Zealand entrant could provide traffic feeds for the New Zealand side of these routes.

Foreign carriers and a trans-Tasman entrant could provide feeder traffic to and from a domestic New Zealand entrant. In addition, and also importantly, Origin Pacific is available to provide feeder traffic to and from provincial routes to a domestic New Zealand trunk route entrant (as well as a trans-Tasman entrant).

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106 ibid, p. 53.

107 The willingness of Virgin Blue to cooperate with an entrant to provide such feeds would almost certainly depend, to a great extent, on that carrier's entry plans in the relevant market segments.

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.

> 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	$36.1	-
2	$67.2	$14.8
3	$60.5	$13.3
4	$85.1	$16.2
5	$93.6	$19.9

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,

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

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.

[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_280202l.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 New Zealand 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:

- market shares are used to infer the marginal cost of output (i.e. the cost of an additional passenger);
- these costs are then combined with assumptions about market demand and the way firms interact strategically; and
- a single final price is then estimated which is consistent with the above information.

In reality, of course, there are many prices on any given flight and prices tend to be reliably and materially lower on VBAs than on FSAs. Moreover, when averaged across all fares and carriers, prices on routes served by VBAs tend to be lower than would be the case if the VBA were replaced by another FSA with the same market share. This indicates that a simple Cournot model will overstate the price prevailing when VBAs operate.

The reason for this can be explained as follows. VBAs with a relatively small market share have a much higher share of the price-sensitive end of the market. Indeed, they are likely to completely dominate the most price-sensitive segment of the market and have a progressively smaller impact as one moves up the distribution of customers. Thus, a Cournot model estimated only over (say) the most price-sensitive half of the market would predict a material cut in prices if a VBA were to enter. This price cut would then place significant pressure on the remainder of the price structure dragging down fares throughout the chain of substitution (see section 2.2.1).

Since our model must be estimated at the level of the whole market this effect cannot be captured. **Consequently, the market outcomes that are predicted from VBA entry are biased in the direction of higher prices and lower output than would actually transpire.** To demonstrate the likely impact of VBA entry we adjust the Cournot results to reflect the impact that VBA entry has had on prices in the domestic Australian market. The methodology used to do this and the results of this analysis are discussed below.

4.1.2 Technical description

Within the Cournot framework each firm maximises its profit given the quantity chosen by the other firms. The profit function of firm i is given by:

$$(1) \qquad p^i(q_i, q_j) = q_i \cdot P(q_i + q_j) - C_i(q_i)$$

where:

q_i is the quantity produced by firm i;

q_j is the sum of quantities produced by firms other than i;

P(.) is the inverse demand function; and

C_i(.) is the cost function of firm i.

The first-order condition for profit maximisation is given by:

$$(2) \qquad \frac{\partial p^i(q_i, q_j)}{\partial q_i} = P(q_i + q_j) - C_i'(q_i) + q_i \cdot P'(q_i + q_j) = 0$$

The first two terms yield the profitability of an extra unit of output, which is equal to the difference between price and marginal cost. The third term represents the effect of this extra unit on the profitability of inframarginal ones. The extra units create a decrease in price P', which affects the q_i units already produced.

Equation (2) can be rewritten as:

$$(3) \qquad \frac{P - C_i'}{P} = \frac{a_i}{e}$$

where:

?$_i$ is firm i's market share $a_i = \frac{q_i}{q}$; and

? is the (price) elasticity of market demand (Q), so $e = -\frac{\partial Q}{\partial P}\frac{P}{Q}$

The price-cost margin of each firm is therefore proportional to the firm's market share and inversely proportional to the elasticity of demand.

These formulae are used to compute, for each city-pair or market, the marginal costs of each market participant. The following inputs are used to determine these marginal costs:

- initial market shares;

- initial price;[137] and
- initial price elasticities.

A straightforward transformation of equation (3) gives the predicted marginal cost as follows:

$$(4) \qquad C_i^{'} = P \cdot \left(1 - \frac{a_i}{e}\right)$$

One of the advantages of this approach is that it avoids assuming that firms have symmetric costs. Airlines have different characteristics that are translated into different market shares. These different market shares are reflected in different marginal costs.[138]

Once the marginal costs have been endogenously determined, they are used to compute the outcome of oligopoly competition after the merger.[139]

To do so, we use a system of equations based on equation (3). The price is such that:

$$(5) \qquad \frac{P - C_i^{'}}{P} = \frac{a_i}{e} \text{ for each firm.}$$

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137 We assume that there is a unique price for each city-pair. This is obviously not the case. However, this price has to be understood as the price for an equal quantity **and** quality of service (including flight frequencies, on-board service, loyalty program). An intuitive rationale for this approach is that it helps to explain why budget airlines do not typically obtain a 100% market share despite their lower prices.

138 One could argue that the differences between airlines are not uniquely based on marginal costs. However, first, as explained in footnote 137, prices and costs also reflect demand conditions (and different willingness-to-pay of customers). Therefore, differences like brand-name are included in the parameter 'marginal costs"' Second, and more importantly, the absolute values of these 'marginal costs' is irrelevant. Only their relative value has an impact on the outcomes.

139 The only change relates to the marginal cost of the participants to the merger. The marginal cost of the merged firm is calculated as a weighted average of the marginal costs of the participants to the merger, with the weights based on pre-merger market shares. Other assumptions, such as maximal or minimal marginal costs, could be made.

The model is closed by using the constraint:

(6) $Q = \sum_{i=1}^{n} q_i$, that is, the sum of all firms' quantity sold is equal to the total quantity, with n the number of firms after the merger.

Now, the final quantity can be computed from the parameters of the model (initial quantity, price and elasticity) and (the unknown) final price:

(7) $$Q^A = Q^B + \left(P^A - P^B\right) \cdot S$$

where:

the superscripts A and B refer to 'after the merger' and 'before the merger' respectively; and

S is the slope of the demand function defined as

(8) $$S = \frac{\partial Q}{\partial P} = -e(Q,P) \cdot \frac{Q}{P}$$

An important characteristic of the model is that the elasticity is also endogenously determined (based on the assumption of linear demand[140]) and depends on the level of price / quantity. If the elasticities were assumed to remain constant, the effect of the merger on price (and quantity) would be extremely large. Indeed, the smaller the elasticity, the larger the difference between N firms and N-1 firms.

Solving the model based on equations (5), (6), (7) and (8), we obtain

[140] One could argue that this is a strong assumption. However, first, a functional form has to be assumed and every other assumption could be open to a subjectivity criticism. Second, any non-linear demand function can be approximated by a linear demand in a certain neighbourhood. The modelling error (which is inherent in any exercise of this type) is therefore of second degree compared to the outcome. Finally, the linear demand function has the nice property of increasing price elasticities when prices increase, which make intuitive sense.

$$(9) \qquad P^A = \frac{-q^B + S.\left(P^B + \sum_{i=1}^{n} C_i^{'}\right)}{(n+1)\cdot S}$$

and the quantity still given by equation (7).

4.1.3 Scenarios modelled

As discussed in section 3, the counterfactual we use to assess the impact of the Alliance involves increased competition, via capacity between Qantas and Air New Zealand. The impact of the Alliance is modelled for years 1 to 5 after the commencement of the Alliance. Price and output results for both the factual and counterfactual scenarios are estimated with respect to a base case scenario of 2001/02. The impact of the Alliance is then calculated as the difference between prices and output under the factual and counterfactual.

It is important to bear this in mind in considering the results. For example, it may be the case that prices in the world with the Alliance are lower than under the base case due to VBA entry. However, if the world without the Alliance also assumes VBA entry then prices may be higher with the Alliance than without, so that the Alliance would result in a competitive detriment. As a result, an assessment of a detriment does not imply prices that are necessarily higher than those that currently prevail; rather, such an assessment simply points to a difference in the likely future world with and without the Alliance at issue.

4.1.4 Model inputs

The model relies on a number of important inputs:

- capacity shares;
- base case passenger volumes;
- base case average fares;
- price elasticity of demand;
- capacity elasticity of demand;
- natural growth; and

- cost differential between a VBA and an FSA.

To determine the factual and counterfactual market shares, capacity shares were used as an approximation. Capacity shares were calculated using the factual and counterfactual schedules provided to NECG by the airlines. For the factual schedule, the airlines provided NECG with a single schedule, based on the commercial agreement reached between the airlines as to the schedule that would exist under the Alliance. The counterfactual schedules were provided to us by each airline on a confidential basis, and hence were reconciled into a single counterfactual schedule. This was done by using Air New Zealand's proposed schedule for Air New Zealand where this differed from the Air New Zealand schedule proposed by Qantas and, similarly, using the Qantas schedule proposed by Qantas where this differed from the Qantas schedule proposed by Air New Zealand. The full factual schedules used in the model are presented in Appendix C. The full counterfactual schedules used in the model are presented in a confidential Appendix D. Base case capacity was estimated using northern winter 2002 schedules.

Base case passenger volumes for Qantas and Air New Zealand were calculated based on 2002 average load factors for Qantas and Air New Zealand multiplied by base case capacity for Air New Zealand and Qantas. Passenger volumes for the remainder of the market were calculated based on capacity shares. For example, if Qantas and Air New Zealand accounted for 75% of capacity on a given city-pair then the total market in terms of passenger numbers for that city-pair was calculated dividing the number of passengers carried by Qantas and Air New Zealand on that city-pair by 75%. Then the 25% of total passengers on that city-pair, which were not carried by Qantas or Air New Zealand, were apportioned between the other airlines operating on that city-pair on the basis of capacity shares.

Base case average fares by sector were calculated based on net passenger revenue for Air New Zealand and Qantas divided by the total passengers per sector for Air New Zealand and Qantas. On domestic New Zealand sectors, net passenger revenues for Air New Zealand were reduced by 20% to reflect the lower fares now available through New Zealand Express.

The price elasticity of demand estimates we used in the model are –0.70 for business customers and –1.65 for leisure customers. These are based on our discussions with the airlines. The impact of altering these elasticities on the model results is considered in Appendix E. To arrive at a single price elasticity estimate, the business and leisure estimates were weighted by the share of business and leisure passengers travelling on each city-pair or in each wider market. The share of business and leisure travellers for each city-pair was provided to us by Air New Zealand and is presented in Appendix E.

The capacity elasticity of demand was used in the model to determine the change in passenger volumes from a change in the capacity that the airlines provide on each city-pair. An increase in capacity would be expected to shift the demand curve out as a result of both current travellers taking more trips and new air travellers entering the market. Hence, under both the factual and counterfactual a capacity elasticity is incorporated into the model to account for the change in the capacity from the base case schedule. A capacity elasticity of 0.125 is used in the model, which is the average of the range presented in Gillen, Harris and Oum (1997).[141] The sensitivity of the model results to the capacity elasticity assumption is considered in Appendix E.

The natural growth factor is used in the model to determine the change in passenger volumes due to natural growth between the base case of 2001/02 and the factual and counterfactual scenarios in 2005/06 and to estimate the increase in capacity for other airlines. Annual natural growth factors were taken from a recent Tourism Forecasting Analysis undertaken by Covec.[142] The sensitivity of the model results to the natural growth factor assumptions is considered in Appendix E.

The cost differential between a VBA and a FSA is used in the model to determine the price that would prevail in the factual and counterfactual scenarios involving VBA entry. The costs of a new VBA entrant are assumed to be 20% below the costs of a FSA. In addition, both the factual and counterfactual involve Air New Zealand moving toward a VBA+ model in domestic New Zealand and hence on these city-pairs Air New Zealand's costs are reduced by 7.5%. The sensitivity of the model results to the cost differential assumption is considered in Appendix E.

4.2 Results

All results presented in this section exclude the impact of any undertakings and conditions that the airlines may offer as part of their application for authorisation. Hence, the results presented here should be considered as overestimates of the potential competitive detriments associated with the Alliance.

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141 Gillen, D., Harris, R. & Oum, T. 1997, 'Assessing the Benefits and Costs of International Air Transport Liberalization', Draft Final Report, July 31, p. 11.

142 Covec 2002, 'International Visitor Arrivals to New Zealand', 2002–8, http://www.covec.co.nz/pdf/tourism_visitor_arrivals.pdf.

4.2.1 Price

When the number of competitors in a market declines and/or the market share of any competitor in a market increases, the merger simulation model calculates an increase in price reflecting a reduction in the level of competition in that market. The extent of the price rise depends not only on the change in the number of competitors and their market shares, but also on the price elasticity of demand. The more price elastic is demand, the smaller the increase in price that will result from a reduction in competition.

Therefore, for the Alliance between Qantas and Air New Zealand, the model simulates price increases across a number of markets. Price increases are largest where Qantas and Air New Zealand are the only airlines operating in a market in the counterfactual and hence in the factual have a market share of 100%. Price increases are smaller, but still significant, for markets where Qantas and Air New Zealand are not the only airlines operating in the future without the Alliance, but where the combined market share of the two airlines is high.

The model is run at the level of individual city-pairs rather than the wider market definitions that we believe are appropriate and hence should be considered conservative. The price results of the model are presented in Table 10 below. The estimated price impact is reported as the percentage difference between the price that would prevail in the world with the Alliance and the price that would prevail in the world absent the Alliance. For example, on AKL-SYD, the modelling results estimate that average fares will be 4.1% higher under the factual than the counterfactual. The results in this table are presented for year 3 of the Alliance.

Table 10: Estimated price impacts of the Alliance, year 3

City-pair	Price impact	City-pair	Price impact	City-pair	Price impact	City-pair	Price impact
AKL-SYD	4.1%	SYD-ZQN	15.1%	RAR-LAX	0.0%	AKL-KIX	0.0%
AKL-MEL	9.8%	AKL-NLK	0.0%	PPT-LAX	0.0%	AKL-NGO	0.0%
AKL-BNE	2.1%	AKL-NOU	0.0%	NAN-RAR	0.0%	AKL-WLG	7.2%
WLG-SYD	4.7%	AKL-NAN	8.6%	RAR-PPT	0.0%	AKL-CHC	5.7%
WLG-MEL	-5.5%	AKL-APW	0.0%	AKL-HNL	0.0%	AKL-DUD	0.0%
WLG-BNE	7.5%	AKL-TBU	0.0%	AKL-LAX	9.5%	CHC-WLG	-3.1%
CHC-SYD	7.8%	AKL-RAR	0.0%	LAX-LHR	0.0%	CHC-ZQN	3.6%
CHC-MEL	3.9%	AKL-PPT	0.0%	AKL-SIN	0.0%	AKL-ZQN	0.5%
CHC-BNE	6.3%	NAN-LAX	13.9%	AKL-HKG	0.0%	SYD-LAX	0.0%
AKL-PER	0.0%	TBU-APW	0.0%	AKL-TPE	0.0%	WLG-DUD	0.0%
AKL-CNS	0.0%	APW-LAX	0.0%	AKL-NRT	0.0%		

An important point in interpreting these results is that VBA entry is likely to constrain price increases to a greater extent than estimated by the Cournot model. Experience in the Australian domestic market suggests that VBA entry has a much more substantial impact on price than is simulated by the Cournot model. To demonstrate the impact of VBA entry we have taken data from the Australian domestic market prior to VBA entry in 2000 and modelled the impact of VBA entry on price and output using the Cournot model. We then compared the modelled results to the price changes that actually occurred two years after VBA entry in 2002. We did this comparison for three of the major domestic Australian routes, namely Sydney–Melbourne, Sydney–Brisbane and Melbourne–Brisbane. The results produced by the Cournot model compared with actual outcomes are presented in Table 11 below.

Table 11: Impact of VBA entry in domestic Australia

Route	Price prior to VBA entry January–June 2000	Modelled price after VBA entry	Actual price after VBA entry January–June 2002	Difference between modelled and actual
SYD-MEL	$184	$176	$173	2%
SYD-BNE	$168	$161	$149	7%
MEL-BNE	$228	$218	$191	13%

These results show that the Cournot model, as expected and for the reasons set out in section 4.1.1, substantially underestimates the impact of VBA entry on prices and hence output. Therefore, the price impacts resulting from the Cournot model should be considered as overestimates of the impact of the Alliance.

4.2.2 Output

The level of output estimated by the model is affected by three factors: price, capacity and natural growth. The estimated price changes presented above feed through to passenger volumes via the price elasticity of demand. As discussed in section 4.1 the price elasticity of demand used in the model is –0.7 for business customers and –1.65 for leisure customers. Hence, the estimated price changes from the model have a proportionately large impact on passenger volumes.

The model includes a capacity elasticity of 0.125 in the base case, which implies that when capacity is increased by 1%, demand increases by 0.125%. The capacity elasticity is included in the model to reflect the change in demand due to an increase in the quality of service offered by the airlines, namely greater frequencies. In the world without the Alliance, the capacity elasticity is likely to overstate the demand response, as many of the Qantas and Air New Zealand flights will be provided at overlapping times.

Finally, the model includes natural growth factors to uplift the base case of 2001/02 to 2005/06. These factors are presented above in Table 9. As these factors are applied to both the factual and counterfactual scenarios, they have little impact on the modelling results (see Appendix E).

The passenger volume results from the model are presented in Table 12 below. As for the price results, the output results are presented as the difference in output between the future with and without the Alliance.

Table 12: Estimated output impacts of the Alliance, year 3

City-pair	Output impact	City-pair	Output impact	City-pair	Output impact	City-pair	Output impact
AKL-SYD	-5.5%	SYD-ZQN	6.8%	RAR-LAX	0.0%	AKL-KIX	0.0%
AKL-MEL	-10.4%	AKL-NLK	-6.4%	PPT-LAX	0.8%	AKL-NGO	12.7%
AKL-BNE	-3.6%	AKL-NOU	-2.7%	NAN-RAR	0.0%	AKL-WLG	-4.7%
WLG-SYD	-4.6%	AKL-NAN	-13.5%	RAR-PPT	0.0%	AKL-CHC	-4.5%
WLG-MEL	9.0%	AKL-APW	2.7%	AKL-HNL	0.0%	AKL-DUD	0.0%
WLG-BNE	-8.8%	AKL-TBU	0.0%	AKL-LAX	-13.7%	CHC-WLG	3.5%
CHC-SYD	-12.2%	AKL-RAR	-1.9%	LAX-LHR	0.0%	CHC-ZQN	-6.5%
CHC-MEL	-2.5%	AKL-PPT	2.1%	AKL-SIN	-2.1%	AKL-ZQN	-7.4%
CHC-BNE	-4.9%	NAN-LAX	-20.1%	AKL-HKG	1.0%	SYD-LAX	-1.2%
AKL-PER	2.7%	TBU-APW	0.0%	AKL-TPE	0.0%	WLG-DUD	0.0%
AKL-CNS	-5.1%	APW-LAX	0.0%	AKL-NRT	0.0%		

4.2.3 Welfare

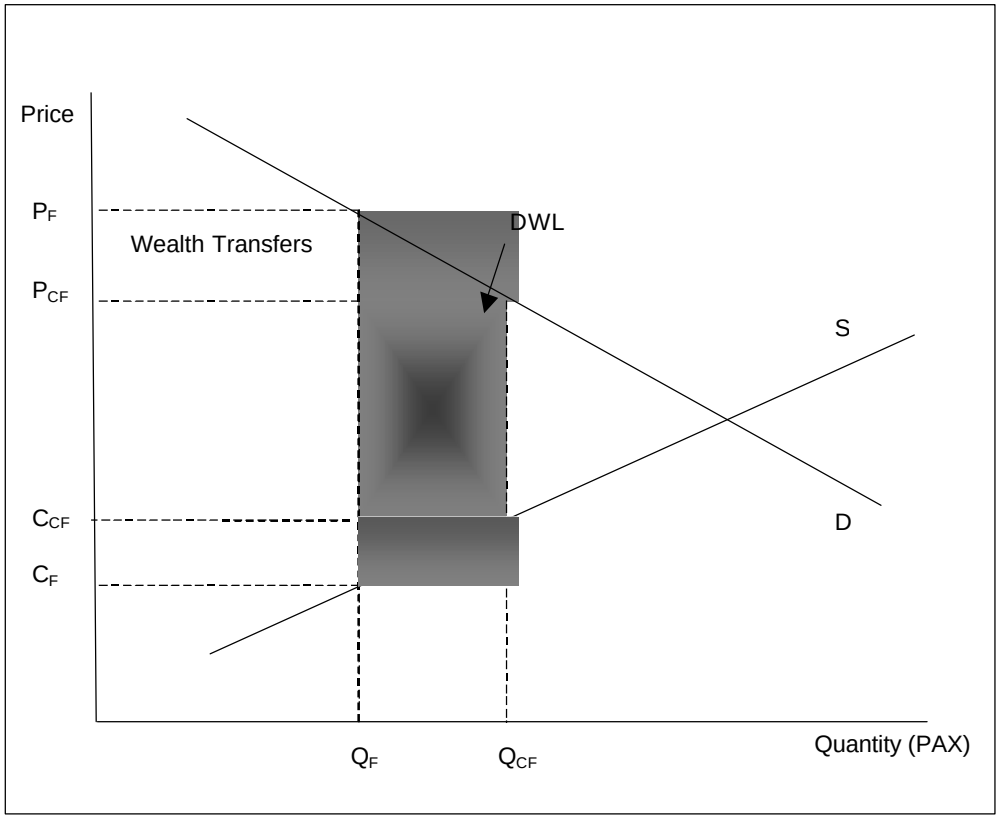
The above price and output impacts have been converted to a measure of the welfare impacts of the Alliance by calculating the deadweight loss associated with the price increases and a portion of the transfers between producers to consumers.

Figure 1 identifies the deadweight loss associated with the price increases and output decreases identified above. The deadweight loss (labelled DWL in the figure) is the amount by which the consumers' valuation of the output no longer consumed exceeds the cost of producing those extra units of output. Therefore, the deadweight loss is the amount producers and consumers combined forego as a result of the price increases and corresponding decline in travel. Importantly, the deadweight loss relevant to the analysis is the difference in the deadweight loss between the factual and counterfactual scenarios, and not the deadweight loss associated with the factual prices and output compared with the competitive prices and output. The deadweight loss is allocated to New Zealand and Australia based on the proportion of New Zealand and Australian passengers carried on each of the major routes. The proportions used for allocation purposes are set out in Table 13 below. Based on these passenger proportions, the greatest share of the deadweight loss is allocated to New Zealand for Tasman and domestic New Zealand routes.

Table 13: Passenger shares used to allocate detriments

	New Zealand	Australia	Foreigners
Tasman	40%	35%	25%
SH Pacific	29%	11%	60%
LH Pacific	15%	26%	59%
Atlantic	21%	2%	77%
Asia	32%	1%	67%
Domestic	90%	5%	5%

Figure 1: Deadweight loss and transfers associated with the Alliance



The deadweight loss allocated to New Zealand and Australia for year 3 of the Alliance is estimated to be $20.1 million for Australia and $25.9 million for New Zealand.

In addition to the deadweight loss, we have included a proportion of the transfers between consumers and producers where we believe this is appropriate. In particular, where New Zealand residents face a price increase, but the profits resulting from that price increase are transferred to a foreign producer (including Australian firms), we have included the transfer as a detriment to New Zealand, and we have done the same with respect to price increases faced by Australian residents. A consistent approach is applied to transfers to producers – where a price increase impacts a non-New Zealand resident, but the resulting profits are transferred to New Zealand producers, the transfer is included as a gain to New Zealand.

Where transfers are made between producers and consumer in New Zealand or producers and consumers within Australia they are ignored in the analysis.

We believe that this approach is consistent with the intention of, and logic underpinning, the authorisation mechanism. This can be seen by considering the implications of adopting a requirement to only consider benefits to consumers – that is, to rely on a consumer surplus standard, rather than on a total surplus standard. Such an approach would be tantamount to only allowing transactions that lessened competition to proceed when the efficiencies were so great that price post-transaction actually declined (at least relative to the world without the transaction). This would result in the vast majority of transactions that increased efficiency not receiving authorisation – an outcome inconsistent with the goals of the authorisation process.

By the same token, we do not believe that it would be reasonable or desirable, in the context of authorisation, to somehow place distributional weights on surplus changes. To begin with, it is unclear how such weights could be sensibly derived. Additionally, there is no reason to believe that competition policy is an efficient or even effective means of achieving income distribution goals – all the more so bearing in mind the specific problems posed for any attempt to use competition policy to this end by the substantial stake New Zealand taxpayers have in Air New Zealand.

As a result, the analysis carried out here relies on a total surplus standard and only pays attention to net transfers.

Transfers from consumers to producers are allocated between Australia, New Zealand and other countries on the basis of passenger shares. Transfers to producers from consumers are allocated to Australia, New Zealand and other countries on the basis of the accounting methods agreed by the airlines. This is achieved by applying the comparison of net positions of each airline after allocating 60% of their respective profits to be retained by them on the basis of capacity. If the

comparison reveals that Qantas's net position exceeds that of Air New Zealand, Qantas will pay half the difference to Air New Zealand and vice versa. The relevant net transfers for year 3 of the Alliance are estimated to be -$13.6 million in Australia and -$15.6 million for New Zealand.

Therefore, in year 3 and without any undertakings the total detriments associated with the Alliance compared with the future without the Alliance are estimated to be $6.7 million for Australia and $10.2 million for New Zealand.

For the full 5 years and without any undertakings the total detriments associated with the Alliance compared with the world without the Alliance are estimated to be, in present value terms, $2.4 million for Australia and $129.9 million for New Zealand (see Table 14 below).

Table 14: Total estimated detriment associated with the Alliance, $million

	Australia	New Zealand
Year 1	-$16.8	$73.4
Year 2	-$1.1	$26.1
Year 3	$6.7	$10.2
Year 4	$6.8	$10.0
Year 5	$6.8	$10.1
Total	$2.4	$129.9

4.3 Detriments on provincial New Zealand routes

The Alliance will have some impact on provincial city-pair routes within New Zealand, especially on Origin Pacific. Origin Pacific commenced operations in 1997 as a charter carrier, and now offers scheduled passenger and dedicated freight services. Offering some direct region–region services that are not available on other airlines, Origin Pacific has recently been adding new nodes to its service network, with Invercargill, Blenheim and Rotorua services commencing in late September.

Qantas currently codeshares on Origin Pacific flights on several provincial routes. As a result of this arrangement, Origin Pacific received 174,198 passengers from Qantas in the 12-month period to July 2002. Of these, 28% were connecting to or from another Qantas flight with the remaining 72% being direct local sales independent of any other flight.

With the Alliance Qantas may no longer codeshare on these routes, which could be expected to have some price effects. Also, the working relationship between Qantas and Origin Pacific will no longer be an exclusive one within New Zealand and hence is unlikely to continue in its current form. This would likely reduce Origin Pacific's market share as connecting traffic is diverted to Air New Zealand and the airline is required to compete for direct local sales. While this may not lead to the loss of all passengers that would otherwise have been passed from Qantas to Origin Pacific, the majority of this traffic must be regarded as being significantly less certain under the Alliance.[143]

The Alliance may impact on the ability of Origin Pacific to expand. There is evidence that Origin Pacific's codeshare relationship with Qantas has assisted its recent network growth.[144] Indeed, it seems likely that the codeshare arrangements have allowed these two airlines to construct a more complete and viable network than either could have done alone. A loss of codesharing is therefore likely to make expansion more difficult for Origin Pacific and indeed might even lead to some contraction.

On the other hand, Mr Inglis, Origin Pacific's managing director, has recently been reported as stating that the arrangement with Qantas was incremental, and not core to Origin Pacific's business, and that Origin would not need to downsize if it lost its codeshare with Qantas.

In the circumstances, while NECG considers that there may be some competitive detriment in the provincial New Zealand domestic market, we have captured these for the four most significant domestic provincial routes in the model it has been constructed. The remaining effects are unlikely to be significant.

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143 We have no information as to the numerical significance of Qantas sales to total Origin Pacific passenger numbers, though this information is clearly germane to assessing the initial impact of the transaction on Origin Pacific.

144 In announcing its new services to Invercargill, Blenheim and Rotorua, the firm attributes this development to 'the introduction of new aircaft to the Origin fleet and codeshare expansion with Qantas Airways', see: http://www.originpacific.co.nz/PublicSite/default.asp?bhcd2=1032735456.

4.4 Detriments relating to global alliances

While no formal decision has been made, one possible result of the Alliance is that Air New Zealand may cease to be a member of the Star Alliance and instead apply to join the **one**world alliance. The precise mechanics and effects of this change, if it were to occur, are uncertain at this stage and we have not imputed any financial detriment to New Zealand arising from Air New Zealand's possible change in alliance status.

The reason for this is that we have no reason to believe that the commercial agreement between the parties will under-value the costs of this change to Air New Zealand. Since the alliance change would deliver a net benefit to both carriers in aggregate, there must exist a range of feasible compensation levels which would make both carriers at least as well off with the change as without it. We therefore assume that the commercial agreement will benefit both carriers. We have insufficient knowledge of the distribution of those benefits however, and have therefore adopted a conservative approach by not attributing a benefit to either party.

The other possible alliance-related detriment is that arising from the stock of frequent flyer credits currently held on Air New Zealand and redeemable on other Star Alliance carriers. If these credits were dishonoured, either directly or indirectly as a result of potential changes in the alliance affiliation of carriers serving Australia and New Zealand, then the attendant loss in social surplus would constitute a public detriment. It is our understanding however that frequent flyer credits would not be dishonoured in any manner if a change of alliance were to occur. The parties have agreed they would indemnify those people holding Air New Zealand frequent flyer credits against the impact of the Alliance, by transferring these points to the **one**world alliance, should Air New Zealand shift alliances. As a result, we consider the transaction to be neutral with respect to alliances.

4.5 Other competitive detriments

There are no material competitive detriments other than the welfare losses discussed above. The reasons for this view lie in the nature of the Alliance itself, which will not harm productive efficiency, nor cause a loss of service quality or reduced innovation incentives, nor lead to an increase in waste due to rent-seeking.

Taking productive efficiency first, this can be assessed by considering the input: output ratio. If more resources are used to produce each unit of output, productive efficiency suffers. The most obvious additional costs are the integration costs which will inevitably flow from the Alliance. Offsetting these, however, are the opportunities for more efficient fleet allocation and maintenance, along with the other efficiencies described in the benefits section of this document.

Although we have not been able to develop reliable estimates of integration costs, there are two reasons for viewing these as relatively insignificant. The first is that the parties themselves are well aware that such costs exist and believe that they are still better off under the Alliance. Second, integration costs are one-off rather than recurring.

The quality of the service provided needs to be viewed in light of the price charged for that service. The fact that a VBA service might be of lower quality than that provided by a FSA is not directly relevant in and of itself, since VBA fares are generally also substantially lower. One of the most significant impacts of this Alliance, however, is that it is likely to increase the spread of service qualities offered to the market by hastening the entry and expansion of a VBA service. This should be regarded as a public benefit rather than a detriment, since it results in an expansion in the range of choices available to consumers. (The price effects of entry are of course already captured in the analysis set out previously). Provided there is sufficient competitive discipline between service providers operating at each end of the service quality space, consumers will benefit from this expansion in the range of their choices.

The final issue to be considered is that of innovation incentives. The public benefits and competitive detriments associated with the Alliance have been largely assessed over relatively short-term horizons of three to five years. Even within this period, we expect that the Alliance will increase the likelihood of some innovation, most notably in the form of entry by one or more VBA. The longer term impact of the Alliance on innovation in this industry has not been explicitly considered however, and is the subject to which we now turn.

The NZCC was concerned about innovation in its Bodas determination. Although this decision recognised the tension between the benefits of competitive pressure on the one hand and some of the innovation-retarding impacts of incumbency, it did not delve particularly deeply into this issue.

At a general level, it is helpful to classify innovation into demand- and supply-side components according to whether their primary effect is to stimulate demand, for example through the introduction of new services, or to reduce cost as is the case with many process innovations (which the ACCC has expressed concerns about in a merger authorisation).[145] We adopt this

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145 ACCC, Application for Authorisation lodged by Australian Pharmaceutical Industries Limited in respect of Proposed Merger with Sigma Company Limited, 11 September 2002, paras 6.95 and 6.99.

classification in what follows, but first begin with a more general discussion of resourcing innovation and of incentives for innovation.

Innovation capability and incentives

Implicit in any concern about the degree of investment in the factual as compared with the counterfactual, is the view that a vigorous price war also suggests more vigorous investment (whether on the side of demand or supply) in comparison to the factual. However, *a priori* reasoning leads one to conclude that private firms with market power have stronger incentives to maximise profit than do firms facing harsh competitive discipline (as would be the case under the counterfactual). Moreover, empirical evidence does not support the view that private sector firms innovate less when they face less competition. Indeed the opposite may be the case.

There are a number of *a priori* reasons why it is mistaken to see a positive relationship between harsh price competition and competition in innovation. In particular, the former makes it difficult to focus on, justify, and resource the latter.

The first concern is that by its very nature, a price war focuses the attention of both the demand and supply sides of the market on just one variable – the price of service. Managers who are engaged in a desperate fight for market share are unlikely to simultaneously be seriously considering an expansion in their range of services or the investment of capital in new generation aircraft or research and development in measures likely to cut costs.

The second related concern is that price wars consume resources that could otherwise be invested in innovation. This is particularly true in the airline industry where the commitment of additional capacity is what sparks off and maintains a price war. Flying lightly loaded aircraft is costly and ultimately wasteful, whether viewed from a social or private perspective. Indeed, the commitment that lies behind this deliberate waste is an important element in an airline price war.

A third concern is that vigorous competition reduces the incentive to invest as returns to investment are competed away (thus the costs of investments are not likely to be recovered). When vigorous price competition can be expected, investment is harder to justify.[146] This is

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146 This is a standard result in industrial organisation theory. See, for example, Dasgupta, P. & Stiglitz, J, 1980, 'Industrial structure and the nature to Innovative Activity.' *Economic Journal*, 90(358), pp. 266-93.

particularly problematic when an innovation cannot be protected by intellectual property rights.[147] Many forms of cost reduction and product expansion fall into this category. For example, successful negotiations with an industry-based union would lower costs for all the rivals of an effectively competitive firm, so if the costs of such negotiations exceed any single firm's expected gain, absent collaboration they will not be undertaken. This externality is internalised by a monopolist.[148]

A fourth concern is that the price war in the counterfactual to this Alliance could result, at least in the domestic New Zealand market, in the exit of one party. If this does occur then the social cost of wastage during the process will have no offsetting benefit (assuming competition does increase innovation).

Finally, when capital markets are not fully efficient, firms are not indifferent between raising capital internally as opposed through debt or share issues. Thus a price war places capital resourcing constraints on innovation. As Parker (1978) puts it (and this broadly construed relates to the first and second concerns also) 'savings and investment must occur' before innovations can be implemented.[149] Commitment of financial resources funds and managerial effort are less readily available in highly price-competitive environments.

While harsh price competition tends to reduce a firm's capacity to innovate, there are few if any *a priori* reasons to believe that a firm with market power faces offsetting disincentives to invest in innovation. It is sometimes argued that an effectively competitive firm has a stronger incentive to be innovative because if it is not, then it is more likely to go bankrupt. If this is true, it must be due to firms being concerned with goals beyond profit-maximisation. The reverse is actually more plausible. Both effectively competitive firms and firms with market power can increase profits by

147 There is some reason to believe that the rate (but not level) of innovation initially increases with competition, but then sharply falls to zero, for innovation that cannot be protected by intellectual property rights. However, in general, a faster or lower rate may be efficient. See Viscusi, W.K., Vernon, J.M. & Harrington Jr, J.E. 2000, *Economics of Regulation and Antitrust* (3rd ed.) MIT Press, Cambridge, pp. 91–3.

148 For an Australian example of this effect, see NECG 2002 'Response to the Productivity Commission's position paper on harbour towage', www.necg.com.au/pappub_PSRSAP.shtml.

149 Parker, J.E.S. ,*The Economics of Innovation* Longman Group Ltd, London, 1978, p. 3.

cutting private costs and avoiding cost-padding so in this respect face similar incentives. However, bankruptcy laws undermine the cost-cutting incentives of a firm facing very sharp competition as compared with a firm with some market power. A firm facing strong competition that does not innovate to reduce costs faces a lower potential loss than a firm with market power that also fails to innovate because the competitive firm's risk of bankruptcy is greater. As it bears a lower expected cost than the firm with market power (so long as each carries some debt), the competitive firm has weaker incentives to innovate efficiently.

Another possibility is that a firm with limited competition has few alternative firms to compare its performance to. To some extent this argument is circular, since if innovation occurs less as competition increases, benchmarking may not be relevant, though this gives too little weight to the role of competitive pressure. In any case, an inability to benchmark does not arise in the situation at hand, since the Alliance would have the ability to benchmark its performance against numerous carriers, including those with operations in highly competitive markets, some of which compete directly with parties to the Alliance.

Empirical evidence supports the view that firms with market power innovate, indeed in some instances, perhaps more so than smaller firms facing more atomistic competition. For example, in what is perhaps the most careful analysis of large firms with market power to date, Chandler found that in the twentieth century, large dominant firms, rather than being inefficient, created 'the most technologically advanced, fastest-growing industries of their day … [providing] an underlying dynamic in the development of modern capitalism.'[150]

With this overview in mind we turn to specific arguments about potential detriments in innovation.

Demand-side innovation

The most important demand-side innovations in the aviation industry have already been identified in this document as being the emergence of VBAs, and the trend towards international alliances. The travelling public of New Zealand and Australia are no less likely to enjoy the benefits of innovations in these areas as a result of the Alliance.

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150 Chandler, Alfred D. 1994, *Scale and Scope: The Dynamics of Industrial Capitalism*, Belknap Harvard, p. 593.

Taking the issue of VBAs first, the entry of a VBA stimulates demand by expanding the number of low-priced fares offered into the market. The Alliance increases the probability of this innovation being widely available within the Australasian region.

At the same time, local travellers will continue to have access to international alliances, albeit under different configurations. A fundamental imperative driving such alliances is the expansion of network reach. For this reason, the exit of Air New Zealand from the Star Alliance will not materially weaken this alliance over the medium term, nor will it significantly compromise competition between these alliances for the patronage of travellers in this region. Instead, we expect the Star Alliance to seek and find other ways of connecting into the region through the initiatives of existing members such as United and Singapore Airlines.

Supply-side innovations: x-inefficiency

Another potential source of detriment due to a an alliance of this kind has been suggested by the ACCC and less directly by the NZCC in its comments on innovation. This is the possibility that any gains in productive efficiency will be lost through subsequent x-inefficiency.[151]

X-inefficiency arises when a firm's operations are inefficient. The ACCC's view appears to be that if an alliance of this kind results in cost efficiencies not passed on to consumers, then it reduces the competitive discipline on the alliance to maintain those cost efficiencies. Over time, x-inefficiencies may creep into the firm's operations eroding the cost gains initially made.

There are two difficulties with this argument. The first is conceptual: that x-inefficiency is confused with economic inefficiency. This leads to an overstatement of detriments under the Alliance (if x-inefficiency is indeed a problem). The second difficulty is that x-inefficiency is simply not a likely problem both conceptually and in practice. These reasons in concert imply actual social waste due to x-inefficiency, if it occurs at all, will be *de minimis*. Moreover, since there are good reasons to think investment in the factual would be higher than in the counterfactual,[152] the net effect of the Alliance is likely to increase overall efficiency and investment, not reduce it.

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151 ACCC, September 2002, *op. cit*., paras 6.95 and 6.99.

152 See the benefits section of this report, and also the two immediately preceding subsections, 'Resourcing innovation' and 'Demand-side innovation'.

Relying on US productivity measures, we find that even if x-inefficiency is accepted as likely, less than 0.5% of the cost efficiencies gained by the Alliance would be lost due to x-inefficiency (which in turn exaggerates actual economic efficiency losses).

In what follows, (1) x-inefficiency is distinguished from and shown to be less than economic inefficiency, then (2) it is demonstrated that x-inefficiency is unlikely as it implies either an unwillingness or an inability on the part of the firm to maximise profits, and (3) if the Alliance is to result in any x-inefficiency at all, it is likely to be small (hence the degree of economic inefficiency arising from this source would be even smaller).

X-inefficiency is not *per se* a form of economic waste. Rather, it typically involves a transfer from the firm to the owners of the factors of production used by the firm. While such a transfer is costly from the perspective of the firm's shareholders, as a transfer it is not costly to society, but represents a form of redistribution from shareholders toward the broader society.

This is not to say x-inefficiency is always without waste. Some wastage may occur due to commitment of resources by the factor owners to obtain transfers, and equally due to effort by the firm (acting for its shareholders) in seeking to prevent such transfers. From the perspective of the firm, any x-inefficiency is a loss, but only that waste that is not transferred to factors of production is a source of economic inefficiency (perhaps best described as a form of rent-seeking). Moreover, expenses incurred by the firm to prevent such transfers are not fully, if at all, wasted once dynamic concerns are taken into account. Dynamic efficiency is well-served by at least some expenditure to ensure investors are not expropriated by opportunism on the part of factors of production. Finally, the only relevant waste is that which occurs in the factual, but not the counterfactual. But since governance of contracts with input suppliers is important in both cases, the change in the cost of governance between the factual and counterfactual is likely to be small.

In short, losses in economic efficiency will be exaggerated if measured by the degree of x-inefficiency since this will typically count transfers which are not a source of economic waste, and indeed may count effort that is dynamically efficient, if apparently not so from a static perspective.

Not only does x-inefficiency overstate economic inefficiency, but the actual level of x-inefficiency experienced by the Alliance, if it occurs at all, is likely to be small. Profit-maximisation, exactly that force that would lead the Alliance to seek to maintain prices above the level of the counterfactual despite having lower costs, necessarily also implies the Alliance parties would do all that is profitable to prevent x-inefficiency. Governance mechanisms and the nature of the Alliance's markets make it unlikely that x-inefficiencies will emerge for at least five reasons:

1. Allowing x-inefficiencies is contrary to profit-maximisation and is not in the interests of shareholders. As discussed in the subsection 'Innovation capabilities and incentives', there

are few if any *a priori* arguments that the incentives to reduce costs facing the Alliance to be poorer (and hence that the Alliance would be more prone to x-inefficiency) than the incentives facing the firms in the counterfactual, nor does the available empirical evidence indicate this would be so. Certainly, few economists would argue that market power *per se* creates x-inefficiency.[153] In this vein, a study of Australian firms found no relationship between the degree of market concentration and efficiency.[154] Moreover, the empirical evidence suggests that if there is any risk, it is that x-inefficiency may be a problem for public, rather than private firms.[155] In this respect, it is material that Qantas, with a

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153 Scherer, Frederick M. 1996, *Industry Structure, Strategy and Public Policy*, Harper Collins, New York, pp. 13–15; and Carlton, Dennis W. & Perloff, Jeffrey M. 2000, *Modern Industrial Organisation*, 3rd ed., Addison Wesley Longman, p. 93, note that in the present case competitive benchmarks are widely available to the Alliance.

154 Ergas, Henry & Wright, Mark 1994, Internationalisation, Firm Conduct and Productivity, RBA Annual Conference. In its Bodas determination, the NZCC inferred bounds on the productivity loss from a US based empirical study. However, compelling evidence that productivity changes vary geographically is found in Ahn, S.C. , Good, D.H. & Sickles, R.C. 1999, 'The Relative Efficiency and Rate of Technological Adoption of Asian and North American Airline Firms', Chapter 4 of Fu, T.-T., Huang, C.J. & Lovell, C.A.K. (eds) *Economic Efficiency and Productivity Growth in the Asia-Pacific Region*, Edward Elgar, MA. There are also sound reasons to expect temporal variation.

155 The likelihood of *productive* efficiency improvements due to privatisation is widely acknowledged. For a survey see Domberger, S. & Piggott, J. 1986, 'Privatisation policies and public enterprise: A survey', *Economic Record*, 66(177), pp. 145–62, on the general principle see Table 3 at p. 155, on airlines see Table 2 at p. 153, noting there were no cases where the public firm was found to be more efficient than the private; on Australian airlines, see Kirby, M. & Albon, Robert P. 1985, *Economic Record*, 61(173), pp. 535–9; for a qualified view to this effect, see Forsyth, P. 1984, 'Airlines and airports: Privatisation, competition and regulation', *Fiscal Studies* 7(1) pp. 61–81, at p. 62. Note that most of the discussion of the impact of privatisation is in the context of market liberalisation. As a result, the point is usually made that the productive efficiency change due to privatisation is likely to be small compared with the allocative efficiency effects of liberalisation. While liberalisation typically increases competition, it should be distinguished from increased competition, since regulation has typically controlled far more than entry (as a proxy for the degree of competition). On airlines see Viscusi et al., *op. cit*., pp. 552–68. The same authors make

significant level of private ownership brings to the Alliance the possibility of better governance, as has been demonstrated by experience in both Australia (for example, with Qantas and British Airways) and New Zealand (for example, TCNZ with the then Bell Atlantic and Ameritech).

2. The Strategic Alliance Agreement penalises inefficiency by requiring a subsidy margin to be paid by a party if it operates a flight that does not produce the highest margin available. That is, if one party wishes to maintain a particular flight on a sector, even though operation of that flight does not produce the highest margin available to the parties, then the party wishing to maintain the flight must subsidise the margin for that flight, so that after such subsidy the relevant sector is producing profit at a level at least equal to the highest margin available for the relevant sector.

   The general uniformity of supply in differing markets would make it difficult to have different work practices in effectively competitive and less competitive markets. The Alliance parties do not have substantial market power on many routes for which they would provide service. However, the operating practices of the parties are already largely similar, most especially in terms of work practices, but also in other important respects. Consequently, it would be difficult to restrict any changes in inefficiencies in operation to only those routes where market power did not lower prices in line with cost efficiencies gained by the Alliance parties. This reduces the likelihood that the Alliance parties would tolerate the emergence of x-inefficiency (assuming it would in other circumstances) as this could present a threat to their viability. Even a small change applied system-wide could have large financial implications.

3. The Alliance parties would continue to operate on effectively competitive routes – for example, between Brisbane and Auckland. As a result, best practice from competitive markets in which the firm operated could be readily used to benchmark its own performance. This would allow managers or the board greater capacity to root out waste.

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similar points to the other writers here on private vs public ownership (see especially pp. 441–51, but note the early Australian airline studies cited rely on partial measures of productivity. When biases in this approach are corrected, the results are considerably more ambiguous, see Forsyth, P. J. & Hocking, R.D. 1980, 'Property rights and efficiency in a regulated environment: The case of Australian airlines', *Economic Record*, June, pp. 182–5 and compare with Albon & Kirby cited in this footnote.

4. The interests of shareholders are enforced by capital market disciplines. The threat of take-over would also discipline the organisation. Profit could be made by purchasing the inefficient firm and 'knocking' it into shape.[156]

5. The general uniformity of supply in differing markets would make it difficult to have different work practices in effectively competitive and less competitive markets, but allowing system-wide x-inefficiency could be disastrous. The Alliance would face differing degrees of competition across directly affected routes. However, the operating practices of the combined entity are largely standardised (at least within each of the partner's operations), most especially in terms of work practices, but also in other important respects. Consequently, it would be difficult to restrict any changes in inefficiencies in operation to only those routes where market power did not lower prices in line with cost efficiencies gained by the Alliance. This reduces the likelihood that the Alliance parties would tolerate the emergence x-inefficiency (assuming it would in other circumstances) as this could present a threat to the Alliance's viability. Even a small change applied system-wide could have large financial implications.

The discussion so far has argued that x-inefficiency exaggerates economic inefficiency, and that in any case x-inefficiency, inconsistent with profit maximisation, is unlikely to occur. However, to the degree that x-inefficiency would emerge, at least three reasons can be advanced that place limits on any resulting efficiency losses:

1. All of the cost efficiencies expected to be gained through the Alliance cannot be expected to be dissipated by x-inefficiency. Rationality on the part of Qantas and Air New Zealand implies the expected effect of the Alliance must be to increase shareholder value, *even in the presence of x-inefficiency*. Indeed, since analysis of the Alliance and the necessary investment to make it work is in itself costly, and because there is a risk that the Alliance will not

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156 This is so even if rents due to market power are always dissipated through x-inefficiencies, so long as these inefficiencies are distributed over routes where market power varies. By spreading the x-inefficiency over the organisation, carriage in competitive markets would be cross-subsidised (costs would be higher than market-dictated prices). A corporate raider could make money by buying the alliance, splitting off its operations in competitive segments from those in uncompetitive ones, thereby forcing costs down in the divested segments and concentrating profit in the remainder of the firm. This profit, at least until further x-inefficiency creep took place, would accrue to the raider, rather than factors of production.

ultimately go ahead (for a range of reasons), or, if it does, will not result in net gains to shareholders (for example, because efficiencies gained are overestimated and/or lost due to unforeseen competition), the expected productive efficiency gains of the Alliance *not lost in x-inefficiency* must significantly exceed these costs. This constrains the potential size of any x-inefficiency losses, which in turn exceed losses of economic (and most particularly dynamic) efficiency.

2. The x-inefficiency argument assumes a gradual slippage in cost control over time. The effect of this will be that the initial cost-reducing effect of the Alliance will dominate the gradual loss in cost-effectiveness (to the extent that it occurs). The net present value of such a flow of benefits and costs will be heavily weighted toward the very large early benefits, and less affected by distant reductions in these. In contrast, productivity gains under the counterfactual are likely to occur gradually, but will be accompanied by dramatic near-term losses. When combined with a reasonable discount rate, it is difficult to imagine that the net present value of total costs could be lower under the counterfactual than they would be if the Alliance were to proceed (and this ignores the likely benefits of the factual due to comparatively higher investment levels).

3. Over time the scale of the relevant markets will grow making entry by other carriers more likely. To the degree that this occurs (and we do not assume it does in our models), increased actual or potential competition will further curb the ability of input suppliers to claim transfers by x-inefficiency.

The absence of x-inefficiency is supported by empirical evidence. For example, in the US airline industry, deregulation first led to a reduction in market concentration followed by increases in

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 New Zealand dollars.

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

Year	Cost savings	Scheduling	New direct	Tourism	E & M	Freight
1	-$4.69	$10.53	$12.99	$81.00	$39.08	$1.23
2	$104.75	$9.94	$12.25	$147.72	$36.87	-$0.05
3	$183.03	$9.38	$11.56	$147.89	$34.78	$3.29
4	$177.00	$8.84	$10.91	$138.33	$32.82	$3.29
5	$167.08	$8.34	$10.29	$130.11	$30.95	$3.29
Total	$627.17	$47.03	$57.99	$645.06	$174.49	$11.07

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

Year	Cost savings	Scheduling	New direct	Tourism	E & M	Freight
1	-$15.91	$2.87	$12.99	$39.06	$0.00	$0.48
2	$67.30	$2.71	$12.25	$88.60	$0.00	-$0.01
3	$140.18	$2.56	$11.56	$127.91	$0.00	$1.28
4	$137.34	$2.41	$10.91	$120.90	$0.00	$1.28
5	$129.67	$2.28	$10.29	$113.52	$0.00	$1.28
Total	$458.59	$12.84	$57.99	$489.98	$0.00	$4.30

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	$20.54	$17.45	$37.99
Queensland	$24.61	$11.53	$36.13
Pacific Islands	-$6.31	-$25.23	-$31.54
North America	$82.30	$108.44	$190.74
Atlantic	$0.49	$1.98	$2.48
Hong Kong	-$4.44	-$17.74	-$22.17
Taiwan	-$0.36	-$1.44	-$1.79
Singapore	$21.55	$86.20	$107.75
Japan	-$2.14	-$8.55	-$10.69
Domestic New Zealand[1]	$21.26	$33.05	$54.31
Total	$157.51	$205.67	$363.17

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 $28 million per annum. Therefore, the net cost savings associated with the Alliance are $363 million in year 3 (or $323 million in present-value terms).

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

Sector	Cost
AKL-ADL	$18.5
AKL-HBA	$3.0
AKL-CBR	$3.0
WLG-CBR	$3.0
Total	$27.6

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.

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

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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 $23 per hour for leisure passengers and $115 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 $2.9 million and to New Zealand of $10.6 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.

[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:

[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 $23 per hour for leisure passengers and $115 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 $26 million per annum (or $23 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 $1.3 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 (eg. Inbound Tour Operator).

QH has estimated that these marketing initiatives would involve an additional outlay of about $14 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 ('000s)	Potential for QH	Additional visitors ('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.

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:

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

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, $\Pr omTAS_t$ is the promotion of the Tasman route by Air New Zealand and $Sep11$ 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)	R^2 = 0.44, ADF(0)	R^2 = 0.72, ADF(3)
	= -4.172 (-4.312)[b]	= -6.578 (-4.312)[b]	= -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.

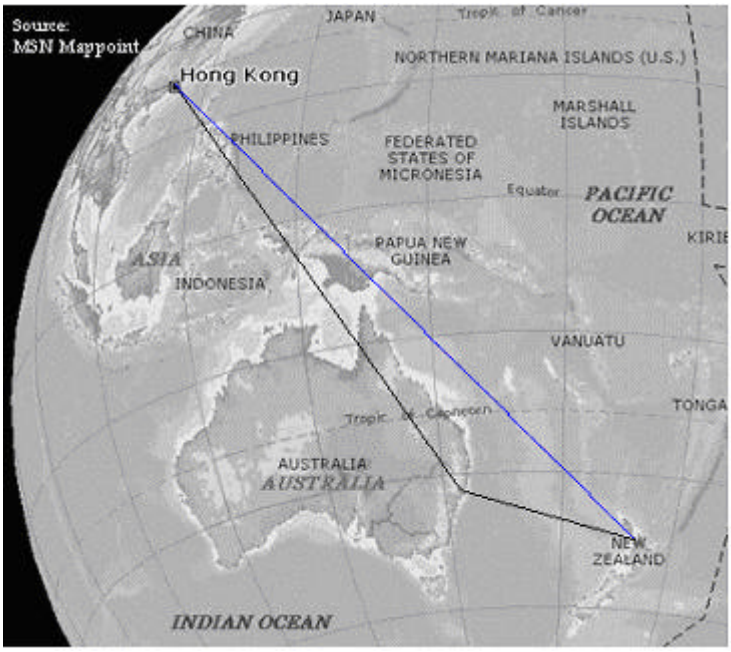
5.3.3 Tourism impacts from new flights and new fares

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

employed in the calculations. These estimates are conservative as they do not include the Alliance induced beneficial effects of increased promotion and increased service quality on tourist arrivals.

5.3.5 Benefits associated with additional tourists

The benefits of additional tourists were evaluated using two alternate approaches. The first involved an analysis using a General Equilibrium Model. The second method used data on typical expenditure levels by tourists. These valuation methodologies are detailed below.

A general equilibrium analysis of the effects of additional tourists

An analysis was undertaken with a Computable General Equilibrium Model of the world economy (known as GTEM) constructed by the Australian Bureau of Agricultural Economics. GTEM includes New Zealand as a separate country. The model was used to simulate the economic effects of an assumed increase in international tourism in New Zealand. As the GTEM database does not have a separate tourism industry, the increase in the number of tourists visiting New Zealand has been modelled as an increase in the exports of the main commodities consumed by visiting tourists. Thus, the value of exports of services, other manufacturing and trade and transport, were increased by NZ$105, NZ$20 and NZ$20 million dollars (in 2002 terms), respectively. This expenditure is of a similar magnitude to that associated with an additional 50,000 tourists arriving in New Zealand.

The tourist export increase was assumed to be the result of a non-price induced preference shift in favour of these commodities by the world market.

The choice of the economic environment, or closure, of the model, can substantially influence the projected impacts of a given scenario. For the modelling in this study, the treatment of the labour market plays a critical role in determining the projected impacts. Two different treatments of the labour market have been considered and implemented:

1. Real wages fixed at the reference case levels.

2. Employment fixed at the reference case level.

The assumption that the real wage rate is fixed at the reference case level captures the short-term rigidity in wage rates that exists in many sectors. Under this assumption, the unemployment rate adjusts with changes in the demand for labour in the economy. For example, in a situation where the demand for labour is increasing, the ‘real wage fixed’ closure means that there is a pool of

unemployed or underemployed labour that industries can draw upon in order to meet the increased demand.

Given the treatment of capital discussed above, the effect of the increase in tourism will therefore affect the rental price of capital (and hence, the rate of return), but will not affect quantity of capital available to New Zealand industries during the simulation period. In a growing economy, it can be expected that the cost of capital will increase and hence, depending on the labour market closure, capital-intensive industries will tend to experience increased cost-squeeze relative to labour-intensive industries.

The results from the simulations are given in Table 25. With a fixed real wage, the additional tourists allow additional labour to be employed, consequently Gross Domestic Product rises. In addition, because the model closure assumes the economy wide stock of capital is fixed, the expansion in the economy increases the economy-wide rate of return. This increases costs which impacts most heavily on certain export-orientated industries, hence exports are reduced. This leads to a significant terms of trade effect that generates additional income for New Zealand.

Table 25: Decomposition of change in real GNP relative to the reference case, New Zealand

	Real wage fixed	Fixed employment
	NZ$ million 2002	NZ$ million 2002
Real GDP	101.06	13.49
Terms of trade on current account	38.46	46.25
Foreign income transfers	0.09	0.11
Total	139.61	59.85

Source: GTEM simulation results

In contrast, in the fixed employment scenario, the simulated expansion in tourist numbers leads to a much smaller increase in GDP because the economy is assumed to have full employment. Consequently, the expansion in tourism takes place by attracting resources from other industries. Hence, a smaller rise in GDP is simulated.

However, in terms of GNP, the smaller rise in GDP is partially offset by a bigger terms of trade effect brought about by a greater contraction in exports from other sectors. This greater

contraction is brought about by a rise in real wages on top of a rise in the real rate of return. The combined effect was to increase costs faced by export industries by more than was observed in the 'Real wage fixed' simulation. Hence a greater contraction in exports is observed which generates a bigger terms of trade effect.

It is interesting to compare the increase in real GNP to the value of the increased tourism expenditure simulated. These calculations indicate that real GNP rose by about 96% of the initial assumed increase in tourist expenditure in the 'real wage fixed' simulation. This ratio fell to about 40% in the 'fixed employment' scenario.

The results can be used to estimate the employment impact associated with the additional tourists. These calculations indicate that the additional tourist would create over 2,500 jobs in year 3.

Table 26: Calculated employment effect from additional tourists

Employment elasticity with respect to expenditure (% per $100 million exp)	0.09
Employment (persons as at Sep 2002)	1,878,000.00
Vanilla tourist expenditure (million)	144.6
Employment impact (persons)	2,528

While the simulation results reported above are illustrative they lend support to the proposition that an expansion of tourism is good for the New Zealand economy. While the results would be sensitive to model assumptions and parameter settings, they also lend support to setting the value of benefits generated by the Alliance approximately equal to the initial effects indicated.

Thus, in the following section the additional net tourists generated by the Alliance are evaluated using tourist expenditure data.

Valuation based on expenditure per tourist

The total number of tourists estimated to be generated by the Alliance was assumed to undertake expenditure in the destination country. Data on typical expenditure by tourists from different destinations was collected. Drawing on the results from the computable general equilibrium analysis, the benefit was then calculated by multiplying the extra tourists by the additional expenditure per tourist.

Where the country of origin was known, through the modelling, a country-specific spend amount was applied. However, if the country of origin of additional tourists was unknown an average expenditure figure was used to calculate the net benefits. Different per tourist expenditure figures were used for New Zealand and Australia. The per tourist expenditure figures were supplied by TFI and are given in Table 27.

Table 27: Assumed expenditure per tourist

Country of origin	Tasman Tourist expenditure ($NZ / tourist)	Overseas (non Tasman) Tourist expenditure ($NZ / tourist)
Australia	1,748	4,052
New Zealand	1,828	3,476
Other	3,197	-

Appling these expenditure values to the estimated net tourist numbers gives a total benefit to New Zealand of over $148 million (in present value terms) in year 3 and a total benefit to Australia of $128 million.

Note that this benefit included the estimated expenditure by domestic tourists who are assumed to divert from the international market to the domestic tourist market under the Alliance. It is appropriate to include the expenditure by such tourists in the total benefits calculation if their expenditure would generate additional employment and activity in the home country. To be consistent with the valuation of the benefits from additional international tourists, the expenditure by the additional domestic tourists who divert from the international market is included in the total benefits.

5.4 Engineering and maintenance

In 2001/02 Qantas directed 43% of its sub-contracted heavy maintenance work to Air New Zealand. This provided revenue of $20 million and supported the employment of up to 100 skilled engineering staff. In 2002/03 this will increase to 78% of subcontracted heavy maintenance corresponding to revenue of $40 million and support of 200 skilled engineering staff.

With the Alliance and the 22½% equity share that Qantas would take in Air New Zealand, Qantas would have an incentive to direct up to 80% of its subcontracted external heavy maintenance to Air New Zealand, providing revenue of $45 million and supporting 224 skilled engineering staff

However, without the Alliance Qantas would seek out the most cost-effective heavy maintenance agreements available in the region. On available information it is unlikely that this process would see large parcels of heavy maintenance work being awarded by Qantas to Air New Zealand. Thus, it has been estimated that, in the absence of the Alliance, external work directed to Air New Zealand could be as low as 10% of Qantas's requirements. This is equivalent to revenue of $6 million and the employment of 30 skilled staff.

Thus the Alliance could provide annual exports of engineering maintenance services to New Zealand of about $45 million compared to $6 million without the Alliance. This is an annual benefit of approximately $39 million.

The future with the Alliance may also provide a substantial platform for investment in the development of additional Air New Zealand engineering and maintenance facilities.

5.5 Improved freight operations

The Alliance will continue to provide, and in some cases improve, freight access to major markets. On the Tasman Air New Zealand plans to replace wide body B767 capacity with narrow body A320 capacity with or without the Alliance. However, under the Alliance certain routes will be supplemented by 'back of the clock' flying using B767 aircraft currently overnighting in Melbourne. The additional Melbourne services will enhance links to Qantas' time sensitive Australian network.

There may also be options to expand freight services into Asia through the use of freighters that currently position empty to Asia although this may require the negotiation of additional rights.

Southbound capacity from USA to New Zealand and Australia will continue to be provided by a substantial freighter network. The introduction of Qantas B744ER equipment will enhance available capacity.

Excluding narrow body aircraft, there is 5.3% additional freight capacity in the future with the Alliance compared with the future without the Alliance by year 3. The majority of this is on the Tasman and Asian routes. The Alliance would also involve:

- improved scheduling, which would deliver efficiency benefits, particularly for the delivery of perishable freight;
- the realisation of cost savings from the use of common facilities and systems; and
- the possibility that the two airlines could operate joint freighter services.

The additional 5.3% of capacity was valued at a yield of $36.01 per tonne kilometre. This gave a benefit of $4.6 million per annum by year 3 of the Alliance.

5.6 Capital-related efficiencies

Air New Zealand has received substantial government funding. The Alliance is very likely to eliminate the risk that further funding from this source will be required and may also allow the government to sell down its stake in the company. There are two public benefits associated with this outcome. The first is that it is likely to improve the governance of the company by strengthening the incentives for the management and board to perform well. Secondly, to the extent that government capital has a higher opportunity cost than private capital, there will be lower resource costs associated with financing the firm.

There is also a third type of capital-related efficiency. This arises from the current taxation environment facing Australian investors in New Zealand firms. We discuss all of these effects in this section.

5.6.1 Improved governance

To the extent that the Alliance allows the New Zealand Government to sell down its stake in Air New Zealand and/or avoid contributing further capital to the firm, society is better off. The source of this advantage is the change in the structure of incentives facing the board and management of the firm.

The recent capital injection by the New Zealand Government has signalled the value the government places on the preservation of its national airline. In taking this action however, the government could also have weakened the incentives that Air New Zealand faces to pursue operational efficiencies and to scrutinise investment plans thoroughly. Since Air New Zealand has already been 'bailed-out' by the government, and as such the government now has a vested interest in the entity's maintenance as a going concern, there may exist a reasonable rationale for the belief that the government would provide 'bail-out' capital again should the need arise. Even if

this were not in fact the case, that belief could affect the views held by input suppliers and others on whom the firm relies.

This is not the case for a privately funded firm. Unless such a firm conducts itself appropriately it may be subject to external disciplinary forces, such as an inability to access funds, a fall in share price, or in an extreme situation, takeover actions. To the extent that the Alliance allows the government to have less involvement in the affairs of Air New Zealand, should it so choose, these commercial disciplines can be more fully restored.

We are not in a position to quantify these benefits with any degree of precision. They nonetheless exist and should be taken into account in considering the Alliance as a whole.

5.6.2 Deadweight cost of taxation

Whatever its benefits, the use of taxation revenue[173] in the purchase of Air New Zealand's shares imposes many costs on society, and affects the way those parties upon whom the cost is borne behave in the market. These costs are collectively labelled the deadweight cost of taxation, a subject that has received much attention.[174] We discuss below, and present valuations for this benefit source, although we have not included this benefit in any of our trade-off analysis due to its one-off, and admittedly uncertain, nature.

In the New Zealand context the key works are those of Diewert and Lawrence, and Small.[175] The Diewert and Lawrence paper focuses on estimating the impact of this deadweight loss in terms of the return required relative to the normal rate of return such that the deadweight loss is fully

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173 Note that even if the funds initiate from some other source such as borrowing, they are still financed by taxation revenue.

174 SeeMusgrave, A.C. 1964, *The Theory of Public Finance,* McGraw-Hill, New York; and Fullerton, D. 1990, 'Reconciling Recent Estimates of the Marginal Welfare Cost of Taxation', *American Economic Review*, 81, pp. 302–8.

175 Diewert, W.E., & Lawrence, D.A. 2000, 'The Deadweight Costs of Taxation in New Zealand'; Small, J.P. 2000, 'The Distribution of Estimates of the Marginal Cost of Taxation'; both in: *Taxation and the Limits of Government*, Kluwer Academic Publishers, eds. G. W. Scully, and P.J. Caragata. (loc?)

compensated. Small then builds on this analysis by bootstrapping the associated distributions and providing confidence intervals for the required return estimates.

The key results are that taxes on consumption and labour generate deadweight costs of 13.7% and 18.3% respectively, with each having strictly positive 80% confidence intervals. Given that these tax revenue sources respectively make up approximately half of total tax revenue, an appropriate figure for use as the deadweight cost of taxation in New Zealand is 15%. This implies that each dollar of New Zealand tax revenue invested is required to earn a rate of return 15 percentage points above the normal risk-adjusted rate of return, in order to cover the social cost of raising these funds through taxation.

If as a result of the Alliance, the investment of further government funds in Air New Zealand is avoided, and/or the government is able to recover some of its investment, then society is better off by the avoided deadweight costs. We are not in a position to quantify the extent of these effects with any certainty however, so we do not include any benefit estimate from this source.

5.7 Other benefits

Two issues that are relevant factors in the formation of the Allianceare the maintenance of global competitiveness, and the preservation of a national flag carrier for New Zealand. These benefits are related in the sense that an enhanced ability for the proposed Alliance to compete vigorously will increase the probability of survival for New Zealand's national flag carrier.

5.7.1 Global competitiveness

As discussed in the global trends section, the key movements in the industry have been the formation of global airline alliances and the appearance of VBAs. As these developments evolve further, there will be increased pressure on airlines that operate significant international networks.

The parties consider that it is important for this region to host a significant international airline and we agree with this view. Many of the benefits we have outlined above, particularly those associated with additional flying and network reach extensions, would not be available at all in the event that the viability of airlines domiciled in this region were substantially eroded.

Consequently, although it is not possible to quantify the public benefits associated with having a more robust and viable international airline located in this region, we nevertheless believe that such benefits do exist and are significant.

5.7.2 Preservation of national flag carrier

The history of aviation landing and flyover rights shows that nations are concerned about their sovereignty as it is reflected in the aviation industry. This concern is not just traditional but is enduring in the modern economy. One of the ways it is reflected is in the desire for countries to maintain a national flag carrier.

We have already stated that we do not envisage either of the carriers going out of business within a three to five year period, even without the Alliance. To this extent, the preservation of a national flag carrier is not relevantly in doubt. Nevertheless, it is worth observing that the value which can be attributed to the survival of the national flag carrier status has recently been made apparent at least with respect to New Zealand. We refer to the New Zealand Government's recent capital injection into Air New Zealand. This contribution of $920 million is a lower bound on the value the government placed on maintaining a viable national flag carrier at the time the capital injection was made.

6 Conclusions

The proposed Alliance will have a significant effect on both of the airlines involved and on air passengers in Australia and, more notably, New Zealand. The Alliance impacts all of the major Tasman and domestic New Zealand routes and does so in ways that vary significantly, with some routes having additional capacity supplied and others having less. To estimate the public benefits and competitive detriments of the Alliance, it is therefore helpful to use a consistent frame of reference which is capable of accommodating quite different scenarios across routes.

The model we have constructed is well suited to this task, being based on a view of the competitive process and how it works that is well known and widely accepted, including in analyses by competition authorities. Having said that, we recognise that the modelling approach we have adopted is likely to overstate the competitive detriment associated with the Alliance. We have also sought to adopt a consistently conservative position to the assessment of public benefits.

We have used the model we have developed to assess the way the market will evolve in the future with and without the Alliance. The future without the Alliance involves aggressive competition between the parties, while the future with the Alliance involves close cooperation.

Our modelling results depend on the likelihood of VBA entry on the Tasman routes and in domestic New Zealand, and the intensity of that entry. In consultation with Qantas and Air New Zealand, we have developed entry scenarios that differ for the future with and without the Alliance.

The estimated net benefits associated with the Alliance are presented below in Table 28 for years 1 to 5 after the Alliance commences.

Table 28: Balancing of benefits and detriments with VBA entry

Year	*Australia*	*New Zealand*
	$ million	
1	$56	$67
2	$172	$285
3	$277	$379
4	$266	$361
5	$251	$340
Total	$1,022	$1,433

We have also modelled the highly unlikely scenario involving no VBA entry in years 1 to 5 of the Alliance. The results of this analysis are presented in Table 29 below and demonstrate that there remains a substantial net benefit both to Australia and New Zealand even in the unlikely event that no VBA entry were to occur on the affected routes. Hence, authorisation should not be dependent on the likelihood of VBA entry.

Table 29: Balancing of benefits and detriments, no VBA entry

Year	*Australia*	*New Zealand*
	$ million	
1	$54	$44
2	$167	$233
3	$272	$326
4	$261	$309
5	$267	$339
Total	$1,021	$1,249

On this basis and considering the long-term benefits to both airlines of consolidating their position in the face of growing international competition, it is our view that the Alliance comfortably meets the requirements of competition law, in both Australia and New Zealand, and hence should be authorised.

Appendix A: Market definition

In defining the relevant markets, it is important to recognise that, ultimately, our purpose is to evaluate the net benefits of the Alliance. Hence, markets should be defined in a manner that best assists in this process. Taking a purposive approach to market definition is consistent with the traditional approach to defining markets in Australian trade practices law.[176]

There are several dimensions to a market: the product, customer, functional, geographic and temporal dimensions. We focus on the first four dimensions in our analysis. While we do not define a separate temporal aspect to the market, our analysis reflects the changing dynamics of the markets over time. For instance, the discussion above concerning the increased coordination amongst airlines is suggestive of market boundaries changing over time.

The economic basis upon which we delineate the relevant markets is based on the approach of analysing demand and supply side substitution. However, we also consider the commercial reality in which airlines operate, especially the global trends affecting the airline industry (see section 2.1). This approach recognises that a strict application of tests for demand and supply side substitution, such as the SSNIP test, may not always accurately expose the relevant arena of competition between firms.[177]

The SSNIP test is a formal approach to analysing demand and supply side substitution, and has been endorsed by both the ACCC and NZCC in their respective merger guidelines as a helpful analytical framework for defining markets in many situations.[178] Conceptually, the SSNIP test approach aims to define the market as the smallest area over which a hypothetical monopolist could profitably impose a small but significant and non-transitory increase in price (SSNIP).

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176 ACCC, 1999, *Merger Guidelines*, June, para 5.41.

177 Smith, Rhonda & Walker, Jill 'The role of commercial reality versus substitution in Market Definition', *Competition & Consumer Law Journal*, vol.5, no.1, August 1997, pp.1–21.

178 ACCC, *Merger Guidelines*, para 5.46; and NZCC, 2001, *The Commission's Approach to Adjudicating on Business Acquisitions Under the Changed Threshold in Section 47 – A Test of Substantially Lessening Competition*, Practice Note: 4, pp. 22–4.

We note that, for the purposes of the SSNIP test, supply side substitution refers to the ability of producers to redeploy existing capacity currently being used to produce other goods or services (or otherwise idle capacity) to produce the good or service at issue. By limiting supply side substitution to switching of existing or idle capacity, the SSNIP test effectively considers substitutability without significant investment, and hence without significant sunk costs.[179]

A.1 Air passenger services market

We believe that there is a product market for air passenger services. The relevant market does not include the provision of other passenger services using other modes of transport. This view is consistent with that of the NZCC in its Bodas determination.[180]

On the demand side, consumers generally do not consider travel by other forms of transport to be adequate substitutes for air passenger services. The exception may be for very short routes, or for certain types of leisure passengers. These are not sufficiently important, in the current context, to act as a constraint on a hypothetical monopolist. On the supply side, suppliers of passenger services using other forms of transport would not likely constrain the conduct of a sole supplier of air passenger services.

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179 The ACCC *Merger Guidelines* state:

> Market entry is distinguished from supply side substitution by the requirement for significant investment in production, distribution or promotion. For example, producers of T-shirts and shoes may be able to readily switch production and distribution facilities from supplying one size of garment or shoe to supplying another size. On the other hand, while a cannery could physically switch from the production of dog food to the production of canned peaches, the firm may need to make a significant investment in promoting the product for it to gain market acceptance. (paragraph 5.53)

180 Bodas determination, para 146.

A.1.1 Customer markets

In its Bodas determination, the NZCC did not define separate customer markets or submarkets, despite recognising that there may exist distinct customer segments.[181] Previously, the ACCC had also held that there were no separate customer markets for business and leisure passengers, and that there were no separate products markets for different cabin classes. However, in its RJSA determination, the ACCC examined the application 'on the basis that a single air transport market for economy and premium class passengers can no longer be assumed.'[182] This view has been reaffirmed in its IATA PAP draft determination.[183]

In forming this view, the ACCC presented evidence to suggest that, while economy class fares had fallen, fares for premium cabins had increased. In forming its view on customer markets, the ACCC stated:[184]

> The Commission acknowledges that supply side substitution is an important parameter in product market analysis. It does not however agree that all airlines in the geographic markets concerned can readily and successfully switch product mixes in response to changes in demand. The applicants have stated for example that in the premium cabin they compete on quality of service rather than price. To accept the Applicants claim would be to accept that most airlines in the market have the ability to readily provide premium cabin service levels which would be regarded as equivalent by consumers. The Commission does not accept this proposition and also considers that in the premium class cabin the high proportion of passengers travelling under corporate contracts and within loyalty programs would likely operate against supply side substitutability.

Our view is that there is a single customer market.

Before outlining our arguments as to why we believe this to be the case, as an initial comment on the remarks of the ACCC, we do not believe that divergence in prices between different fare

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181 Bodas determination, paras 121–5.

182 RJSA determination, pp. 47–9.

183 IATA PAP draft determination, pp. 56–7.

184 RJSA determination, p. 49.

classes necessarily evidences either separate product (or customer) markets or the exercise of market power against a particular class of customer. Rather, what is important in assessing any such issues is the overall profitability associated with moving from one fare structure to another. This requires a consideration of not only price, but costs, which are in turn driven by factors such as volumes and service quality. In the example noted by the ACCC, if underlying costs moved in the same direction as prices, then overall profitability associated with price movements would be neutral, consistent with a single customer market and no exercise of market power.[185]

With respect to the ACCC's view that, for premium class passengers, corporate contracts and loyalty programs would likely operate against supply side substitution, the argument presented by the ACCC tends to be more related to demand side rather than supply side substitution. In addition, these constraints are relevant in assessing the scope for substitution between airlines. However, they need not be constraints in preventing demand side substitution between fare classes. Finally, as corporate customers increasingly seek to contain their own costs, allegiances to particular loyalty programs are likely to be less significant than their bottom line.

Turning to our own views, we do not dispute the fact that business and leisure passengers, at least in some aggregate respects, exhibit different demand characteristics. For instance, speaking very generally, leisure customers are arguably more sensitive to price, whereas business customers focus more on the frequency and flexibility of schedules and to a greater or lesser extent on service quality. This is reflected on the supply side by the manner in which airlines have attempted to compete for these different types of passenger as well as the manner in which airlines have attempted to segment the market.

However, as the following sections demonstrate, from an economic point of view, we believe there is a single customer market due to supply side complementarities, which may be accentuated by the size of the markets in question, supply side substitution, and demand side substitution.

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185 Indeed, economic theory would predict that fares in business would rise relative to fares in economy following VBA entry, though both might fall in absolute terms. This is for two reasons: VBA entry will probably increase the FSAs elasticity of residual demand in the economy cabin relative to the elasticity of residual demand in the business cabin, hence shifting some part of the burden of fixed cost recovery to business customers; and to the extent to which VBA entry forces the FSA to reduce the standard of service it provides in the economy cabin, say by reducing or even eliminating meal service, the incremental costs of providing a full range of service in business will be greater, and hence, the relative fare will increase.

Supply side complementarities

Ultimately, the delineation of customer markets is only helpful to the analysis if it assists in highlighting the market power that might be exercised by the Alliance against particular classes of passenger. If existing or potential competitors to the Alliance target the full range of customers, rather than particular classes of passenger, this would suggest that delineating separate customer markets may not be helpful.

Our view is that because of supply side complementaries in serving the full range of customers, and because of the relatively small size of the routes in question, existing or potential competitors do or would enter for the purpose of serving a broad range of customers.

Different passenger types are, at least to some extent, complementary. There are significant economies of scope that can be achieved through serving a wide range of customers rather than specialising in only one customer type. For instance, business and leisure customers can have different demand profiles by time-of-day, day of week and so on. A supplier of services to leisure customers would face extremely lumpy demand with substantial demand during holiday periods but more limited demand at other times. On the other hand, a supplier of services to business customers would face high demand at peak times of the working day with more limited demand at other times. However, serving both customer types allows the airline to achieve a smoother demand profile, higher capacity utilisation and thus lower unit costs.

Furthermore, and very importantly, serving a broad range of customers allows airlines to price discriminate between customers with different demand characteristics by charging different prices for different types of tickets that provide various levels of service and flexibility. In this way, airlines can maximise aircraft utilisation and contributions to fixed costs from the differential margins over marginal costs that they are able to charge to different groups of customers. This is most clearly seen in the differences in price within the economy class cabin as illustrated in Table 30, whereas price differences between economy, business and first class tickets may be more or less accounted for by differences in costs associated with providing greater comfort and service.

Table 30: Summary of fares sold by Qantas for travel between Auckland and Sydney

	SYD / AKL (vv and o / w) (EX Australia)						AKL / SYD (vv and o / w) (EX New Zealand)					
Cabin	Res Class	Fare (AUD)	Return / One Way	Advance Purchase	Min Stay	Max Stay	Res Class	Fare (NZD)	Return / One Way	Advance Purchase	Min Stay	Max Stay
First	F	$2,404	Return	-	-	-	F	$2,765	Return	-	-	-
Class	F	$1,323	One Way	-	-	-	F	$1,522	One Way	-	-	-
Business	D	$1,829	Return	-	-	-	D	$1,959	Return	-	-	-
Class	J	$2,001	Return	-	-	-	J	$2,219	Return	-	-	-
	J	$1,101	One Way	-	-	-	J	$1,221	One Way	-	-	-
Economy	V	$509	Return	14 Days	SU	30 Days	M	$749	Return	14 Days	SU	90 Days
Class	M	$549	Return	14 Days	SU	21 Days	K	$879	Return	10 Days	SU	90 Days
	K	$669	Return	10 Days	SU	90 Days	H	$979	Return	7 Days	SU	-
	H	$799	Return	7 Days	SU	365 Days	B	$1,349	Return	-	-	-
	B	$999	Return	-	SU	365 Days	B	$756	One Way	-	-	-
	B	$659	One Way	-	-	-	Y	$1,578	Return	-	-	-
	Y	$1,379	Return	-	-	-	Y	$869	One Way	-	-	-
	Y	$758	One Way	-	-	-						

Note: Fares current as at 12 June 2002 for travel on 30 June 2002. Fares exclude GST.

The importance of exploiting such complementarities may be reflected in the business models of successful entrants. In this respect, and as noted in section 2.1.3, Virgin Blue, the most successful recent entrant into either Australian, Tasman or New Zealand routes, has actively targeted a very broad segment of the market. For instance, while it does not offer a premium cabin, it is clear from its flight frequencies that it aims to serve business as well as leisure customers on many Australian

domestic routes. Virgin Blue's commitment to targeting all customer types, including corporate customers, is apparent in the following Virgin Blue news release, which highlights its acquisition of corporate customers:[186]

> Jon Marshall, Virgin Blue National Sales Manager said, "Since September, we have seen a dramatic increase in sales to major corporations who have chosen Virgin Blue to meet their travel needs including Boral, Origin Energy and P&O-Nedlloyd. These organisations have clearly recognised that their shareholders are more concerned about affordable airfares than frequent flyer programs, re-heated meals and having their executives jostling for celery sticks in airport lounges."
>
> He continued, "Virgin Blue has also secured key State travel agreements in Queensland and South Australia with a commitment to provide government travellers with increased flight options and friendly, reliable service, while reducing their travel spend. Earlier this month, Virgin Blue opened its first government account in Canberra with the High Court of Australia, establishing the first crack in Qantas's high-priced stranglehold on taxpayer financed federal government travel."
>
> With Virgin Blue recently winning a number of service awards, both domestically and internationally, the airline has clearly established itself as Australia's leading carrier when it comes to service, and has now demonstrated it is able to address all major market segments in the wake of the Ansett collapse.

Virgin Blue's migration to the Sabre GDS system is consistent with this commitment.[187] Similarly, Qantas's entry into New Zealand is also based on the strategy of serving all passenger types, as indicated by its cabin structures and flight schedules.

Virgin Blue's targeting of the full range of customers may be due to the size of the markets in question. In relatively small markets, such as the markets in which domestic Australian, domestic

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186 Virgin Blue Press release, 2002, 'Virgin Blue Signs First Global Travel Distribution Deal: Airline Making Inroads in Key Government and Corporate Markets', 17 January, http://www.virginblue.com.au/news/jan2002.html.

187 Virgin Blue Press release, 2002, *op. cit*., 17 January. See also Virgin Blue Press release, 2002, 'Virgin links with Sabre', 18 January, http://www.travelbiz.com.au/articles/6f/0c00a26f.asp.

New Zealand and Tasman services are provided, the size of the overall market may necessitate the targeting of a broad range of customers. In any event, the experience with Virgin Blue's successful entry into the domestic Australian market suggests that, in entering Australian or New Zealand routes, economies of scope in serving a broad spectrum of passengers are sufficiently strong, such that competing in these markets by attempting to target a narrow range of passenger types will not be profit-maximising and may even not be feasible. Given the scale and scope of observed successful entry for the routes relevant to this analysis, this suggests that distinguishing customer markets may be unnecessary and unhelpful.

Supply side substitution

Contrary to the ACCC view, we believe that there is supply side substitution between customer groups. This is most obvious within the economy class cabin, where airlines can simply reallocate seats between the various fare types according to the profile of demand. Indeed, such reallocation is the essence of yield management, which exploits the economies of scope referred to above so as to maximise revenue and loading. Clearly VBA airlines are able to compete for all types of passengers within the economy cabin and typically do so.

While there are some specialised assets that might be required to provide a specialised business class cabin, such as check-in desks and seating, the investments required do not appear to be so significant as to prevent supply side substitution. Most importantly, there is no reason to believe that if there were significant margins to be made over marginal cost by providing a specialised business class cabin, VBAs would not seek to do so. For this to be the case, there would need to be diseconomies between serving the different market segments. There is no evidence of any such diseconomies, though the incremental costs of providing a business cabin may or may not be higher than those of FSAs.[188]

[188] It is conceivable that the incremental costs of providing a high standard business class cabin depend on the base level of service provided in the economy cabin. In other words, it is possible that a VBA, that offers a relatively low service level in the economy cabin, would incur a somewhat higher cost in providing a business class service than would an airline that was providing a higher standard of service in the economy cabin.

Demand side substitution

While the demand side of the market is characterised by a wide range of characteristics, which airlines seek to exploit through price discrimination, there is likely to be a continuous 'chain of substitution' that links all these fares – from the most budget to first class – such that an attempt to exercise a SSNIP over only one segment of that continuum will be defeated by substitution.[189] By definition, this would also mean that all customers are in the same market.

To demonstrate how the 'chain of substitution' could apply, let us assume that there are four types of fare: budget, restricted economy, unrestricted economy and business class.

Consider a situation where there was a sole supplier of business class fares, while the markets in which the other fare types were sold were workably competitive. What would happen if the monopoly supplier of business class fares attempted a SSNIP on business class fares (while the prices of other fares initially remained constant)? Some consumers who purchased business class fares might purchase unrestricted economy class fares. If we assume increasing short run marginal costs[190], the increase in demand for unrestricted economy class fares would result in an increase in these fares. This might then induce some switching of demand from unrestricted economy class fares to restricted economy class fares, and so on down to budget fares.

It would be reasonable to conclude a single product market for all fares if it could be demonstrated that the 'chain of substitution' was sufficiently continuous *and*, at each stage, enough volume shifts so that, overall, substitution would be sufficient to defeat the attempted

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189 The relevance of considering a 'chain of substitution' or 'ripple effect' for the purpose of defining markets has been acknowledged by both the ACCC and the NZCC in their respective merger guidelines. See, ACCC, 1996, *Merger Guidelines*, paras 5.55 and 5.56; and NZCC, *The Commission's Approach to Adjudicating on Business Acquisitions Under the Changed Threshold in Section 47 – A Test of Substantially Lessening Competition*, Practice Note: 4, section 5.5.

190 The increase in marginal costs need not involve rising resource costs. Rather, marginal costs may rise to the extent to which an increased supply of seats of one fare type reduces the ability to supply seats into other, potentially no less profitable, fare types. The relevant marginal costs are in other words, opportunity costs, and need not involve a greater demand on physical resources.

SSNIP. If it could be demonstrated that there was a single product market for all fare types, it would follow that no separate customer markets can exist.[191]

We undertake a more simplified analysis, which is to consider whether economy class and business class fares are in the same market. To do this, we perform a Critical Loss Analysis (CLA), a quantitative approach developed by Harris and Simons (1989), which can be used to assist in defining markets.[192] The CLA approach is essentially an empirical technique to determine how many sales would need to be lost for a SSNIP to be unprofitable, in this instance, to test whether a hypothetical monopoly supplier of business class fares on Tasman and domestic New Zealand routes could profitably impose a SSNIP on business class airfares.

Practically speaking, the CLA aims to find the quantity of lost sales that would just make a SSNIP unprofitable. (These losses would arise from substitution to economy fare classes on the same aircraft or to rival carriers operating economy class-only flights on the same routes.) That is, it represents a point of balance between the lost contribution margin on the sales lost because of the SSNIP, and the increased contribution from the higher post-SSNIP price on the remaining sales. Our full CLA analysis is presented in Attachment A to this appendix. Summarising our results briefly, our analysis demonstrates that, as airline contribution margins are generally high, relatively small losses of sales would be sufficient to make a SSNIP unprofitable, thereby demonstrating that the two fare types are in the same market.

Our CLA results are consistent with the behaviour of business class yields and loads in Australia following Virgin Blue's entry, where Qantas' yields and loads in the business cabin fell following Virgin Blue's entry, despite the fact that Virgin Blue was not, and still is not, providing business class travel (see section 2.1.3).

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191 The analysis assumes that airlines cannot discriminate against passengers on the basis of their type but rather solely on the basis of the fares they prefer or seek to acquire.

192 Harris, B.C. & Simons, J.J., 1989, "Focusing Market Definition: How much substitution is necessary?". *Research in Law and Economics*, vol. 12, pp. 207-226.

A.1.2 Functional markets

As highlighted in section 2.1.4, consumers are increasingly purchasing airline tickets directly through airline call centres and Internet sites. This has coincided with the rise of VBAs, which have placed significant emphasis on direct sales as their primary means of distribution. Growth in direct purchases has been particularly strong with respect to the purchase of domestic air services, with around half of all domestic tickets in Australia directly sold by airlines to consumers through airline call centres and the Internet. On the basis that these distribution channels are seen as substitutes by consumers to other channels of ticket distribution such as travel agents, there are no distinct functional layers within the air passenger services market.

Our view is consistent with the approach that has previously been taken by the ACCC. In both its decision regarding the alliance between Singapore, Ansett and Air New Zealand ('SQ/AN/NZ determination') and its RJSA determination, the ACCC defined a single market for ticket sales, with no separate functional levels. In its SQ/AN/NZ determination, the ACCC noted that consumers could purchase tickets from any segment of the distribution system.[193] Similarly, the ACCC noted in its RJSA determination that consumers viewed airlines as an alternative source of tickets to travel agents.[194] A similar view has been expressed in its IATA PAP draft determination.[195] The ACCC has also not distinguished separate functional markets in considering mergers and acquisitions involving retail and wholesale travel agents.[196] This approach is also

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193 RJSA determination, p. 44.

194 RJSA determination, p. 50 to 51.

195 IATA PAP draft determination, p. 59.

196 In allowing Air New Zealand to purchase the remaining 50% of JetSet Travel and Technology Holdings, the market was merely defined as that for 'airline ticket sales'. In considering the proposed acquisition by Concorde of Metro, the ACCC viewed the relevant markets as follows:

> (i) for the supply of international airline tickets by consolidators and by airlines via IATA to retail travel agents in Australia; and (ii) for the supply of domestic airline tickets to retail travel agents in Australia by consolidators, airlines via IATA and by airlines direct to consumers. (www.accc.gov.au/pubreg/s50/docs/99m97.pdf)

consistent with the legal approach taken in *Tru Tone*,[197] on the basis that travel agents do not assume ownership of airline tickets, but merely act as agents of the airlines.[198]

A.2 Air freight services market

In its Bodas determination, the NZCC expressed the view that, for freight services, land transport was a viable substitute for air transport for all but same day delivery freight.[199] Hence, the NZCC considered deferred and overnight delivery services to be provided in the broader market for domestic freight services. The NZCC also held the view that while the market for same day delivery freight services was relevant for the purpose of considering competitive effects, these would be captured in an analysis of the relevant domestic air passenger services markets. For this reason, the NZCC chose not to define a separate market for domestic air freight services.

In its RJSA determination, the ACCC noted that it had considered whether separate markets exist for time critical and non-time critical air freight in its prior OJSA and SQ/AN/NZ determinations.[200] The ACCC recognised that this issue was related to the defining of geographic markets. In the ACCC's view, whether or not separate markets exist depended on factors such as the nature of goods being delivered and whether sufficient adequate transit points were available within each region to provide indirect route alternatives. The ACCC was satisfied that this was the case, and hence, defined a single market for air freight, with separate market segments for time critical and non-time critical freight. In its RJSA determination, the ACCC reaffirmed these previously stated views.

Our views are similar to those expressed by the NZCC and ACCC. We agree that it is difficult to precisely define the product market for freight. We also agree that issues regarding product markets overlap with the issue of geographic markets. Our view is that there is a continuum

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197 *Tru Tone Ltd & Ors v Festival Records Retail Marketing Ltd* (1988), 2 NZBLC, pp. 99–113; *Tru Tone Ltd v Festival Records Retail Marketing Ltd* (1988), 2 NZLR, pp. 352–64.

198 See European Commission decision, IV/D-2/34.780 – Virgin/British Airways for a consistent approach.

199 Bodas determination, para 149.

200 RJSA determination, p. 50.

where, at one extreme, there is freight that is highly non-time critical. Delivery by a range of transport modes, including delivery by sea, may be viable. At the other extreme, there is freight that is time critical. In these instances, only certain types of transport may be viable as modes of delivery, including delivery by air or, where feasible, rail delivery or "door to door delivery" by road. Consistent with this, our view is that air freight services are likely to be included in a market for time critical freight.

While we believe this to be the relevant market in which freight services are provided, we proceed on the basis that air freight services are provided in a distinct market. This approach will obviously be conservative (i.e. overstate competitive effects arising from the JSA) due to the scope for rail and road delivery to provide alternative modes of transport in some instances. However, proceeding on this basis simplifies our analysis significantly.

Confining the market to only include air freight services, competitive effects are likely to be largely revealed in our analysis of air passenger service markets, impacts arising in this market are likely to be largely revealed in our analysis of air passenger service markets. As the Productivity Commission (1998) has previously noted, almost all air freight is carried in the bellyholds of air passenger aircraft:[201]

> More than 90 per cent of Australian international air freight is carried in the belly-holds of passenger aircraft. Because freight carriage on many routes is essentially a by-product of the carriage of passengers, charges can be very low, essentially related to the marginal fuel cost of carrying extra weight.
>
> Less than 10 per cent of Australia's international air freight is carried in dedicated freighter aircraft, operated predominantly by foreign airlines. Dedicated freight services operate overnight across the Tasman and to Asia, the United States and Europe.

This is also consistent with the data we have obtained, which indicates that, in the 12 months to December 2001, 85% of Tasman air freight was carried in passenger aircraft bellyholds.[202]

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201 Productivity Commission, 1998, *International Air Services*, September, p. 24.

202 Bureau of Transport and Regional Economics. The proportion of air cargo carried by passenger operators from New Zealand to Australia was approximately 88% for the 2001 calendar year,

Having said that, this approach will likely overestimate detriments. Aside from the point noted above that other modes of transport, such as road freight, may constrain air freight services in some instances, specialist air freight operators are active in a wide range of markets. In addition, entry and expansion barriers into air freight markets are low. As a result, there is a high likelihood that expansion by these service providers could defeat an attempted price increase on freight by passenger airlines.

A.3 Geographic markets

In its Bodas determination, the NZCC defined markets for domestic New Zealand main trunk passenger air services (capturing services between Auckland, Christchurch and Wellington), provincial New Zealand passenger air services, and tourist passenger air services. In addition, the NZCC defined a market for Tasman routes and a market for all other international routes.[203]

In its RJSA determination, the ACCC distinguished between the domestic Australian market and the international market for air passenger services. The ACCC believed that distinguishing a separate domestic market would be appropriate so long as foreign-owned international carriers were precluded from operating in the Australian domestic market.[204]

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slightly higher than the corresponding proportion for air cargo carried from Australia to New Zealand, which was 83%.

203 Bodas determination, paragraph 168. The NZCC's delineation of distinct markets within domestic New Zealand was based on the volume of passengers carried along the routes, the type of aircraft used to deliver services, and the types of traffic feeding onto routes. For international routes, the NZCC's view was that the majority of international routes shared similar characteristics, and hence, should be considered jointly. However, a separate trans-Tasman market was distinguished based on differing market participants and regulatory conditions. For air freight services, the NZCC defined a domestic New Zealand market and an international market.

204 RJSA determination, p. 47. Similarly, in its SQ / AN / NZ draft determination, the ACCC believed that domestic passenger services were provided in a separate market to international services because of the different regulatory environment and lack of competitors to Ansett and Qantas. See SQ / AN / NZ draft determination, p. 45.

However, the ACCC also recognised that with the advent of international alliances, impacts in international markets may have ramifications for domestic markets. The ACCC defined separate international markets on a country to region basis, and concluded that the country to region international markets defined for passenger services were also appropriate for freight services.

For both air passenger and freight services, we believe there is a single market that includes air passenger services provided in New Zealand, Australia and on the Tasman. Alternatively, there are three separate markets for New Zealand domestic services, Australian domestic services and Tasman services. Within the domestic New Zealand market, we believe it is helpful to distinguish between main trunk services, similar to the approach taken by the NZCC in its Bodas determination.

We also believe that there is a market for Pacific Island services.[205] We do not have a firm view on the relevant markets in which services along other directly affected international routes are provided, nor do we believe that such a view is required to assess the issues raised in the matter at hand. We analyse these routes on a city-pair basis, namely Sydney–LA, Auckland–LA, Nadi–LA, and Papeete–LA.

Our analysis of the geographic scope of air passenger and air freight service markets can be simplified into a series of questions, which we now address in turn.

Are international services provided in the same market as domestic services?

We do not believe that international services (defined to exclude services across the Tasman) are provided in the same market as Australian and New Zealand domestic services.

On the demand side, there is limited scope for substitution. There are some leisure travellers for whom destinations are substitutable, but the extent and (most importantly) market impact of the substitution is likely to be limited, relative to the level of substitution needed to defeat a SSNIP.

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205 We note that the majority of travellers to Pacific Islands are likely to be leisure passengers with high cross-elasticity of demand with respect to other holiday destinations, such as Maldives or Cairns. Therefore both the product and geographic dimensions of the market may be broader.

On the supply side, we are concerned with the scope for supply side substitution without requirements for significant investments as noted above. It is therefore useful to outline what we consider to be significant investments in the context of delineating geographic markets.

An airline's entry onto a new route is not a costless exercise. As an example, consider a hypothetical situation in which a sole supplier of air services on (say) Wellington–Christchurch attempted to impose a SSNIP. Then, regardless of whether an airline attempting to defeat the SSNIP had an existing presence domestically within New Zealand, or whether it only had a presence domestically within Australia (or anywhere else), airlines would incur some costs associated with supply side substitution. These costs would include the costs associated with establishing a terminal presence, selling costs, as well as a range of other organisation and administration costs.

These costs are not so significant as to constitute the significant investments necessary to prevent effective supply side substitution in response to an attempted SSNIP. If they were, then, assuming no demand side substitution, a strict analysis of demand and supply side substitution would suggest that every city-pair would constitute a separate market.

Instead, we consider the types of hurdles that could possibly be considered to prevent an airline from providing effective supply side substitution in response to an attempted exercise of market power by an airline on any given city-pair to include legal and regulatory constraints, the ability to move aircraft (with the appropriate capabilities) onto a new route, and other route specific investments, such as those associated with establishing a brand presence on a route.

It is important to note that even if there are significant investments that prevent effective supply side substitution onto a particular route, this does not necessarily connote high entry barriers. This is because supply side substitution, to be sufficient to warrant inclusion of a source within a single market, must be so easy that the capacity that would be transferred over already weighs on incumbents' pricing decisions. As a result, even relatively modest investments, and short lags in the time to entry, may exclude services from being supply side substitutes. However, these would not constitute substantial entry barriers when viewed in a longer term perspective.[206]

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206 Additionally, assessment of supply side substitution requires consideration of the opportunity cost of shifting capacity from the source activity to the target. If pricing at the target is close to being competitive (as is implied in a SSNIP test, at least for small candidate price increases), then it may

Our view is that the scope for supply side substitution by international carriers into domestic and Tasman routes (as opposed to substitution in the opposite direction) is limited given that eighth and ninth freedoms are a strong constraint, as are scheduling issues.

Specifically, effective supply side substitution from international carriers into either domestic Australian or New Zealand routes is limited due to the nature of bilateral agreements. In particular, almost all airlines lack the full cabotage rights (eighth and ninth freedoms) that are required in order to provide domestic services in New Zealand on an effective basis. The exceptions to this rule are Australian airlines, which are granted these freedoms in New Zealand, and similarly for New Zealand airlines with respect to Australia, in accordance with the Open Skies agreement between Australia and New Zealand discussed in section 2.1.1.

Hence, we believe that at present, with the exception of services provided along Tasman routes, air passenger services provided along international routes should be considered as being provided in separate markets from domestic air passenger services provided within Australia and New Zealand.

That said, as the industry evolves, it is conceivable that the distinction between international and domestic markets may become blurred. As a matter of commercial reality, airlines increasingly view themselves as competing in a global environment, in which their long-run competitiveness depends on presence and reach across all major geographies. This is one factor, and likely an important one, undergirding the trends, such as ever wider use of code sharing by international airlines on domestic flights, that the ACCC pointed to in its RJSA determination.[207]

As matters now stand, regulatory hurdles are still too high to prevent full market integration. There is some uncertainty as to when these hurdles will be materially eliminated. There is little doubt, however, that the process of integration is well underway – if nothing else because customers increasingly seek and demand some degree of global presence from the carrier on which they most heavily rely – and will continue to gather momentum. Reflecting this, airlines themselves view the market in terms significantly wider than those that a conventional SSNIP analysis would suggest. As this is a major influence on corporate strategy, it needs to be taken into

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not be profitable to divert capacity from the source activity for short periods of time. However, this would be less of a deterrent to entry decisions taken in a medium-term perspective.

207 RJSA determination, p. 46.

account in the analysis, even if the approach to market definition does not fully capture its practical significance.

This is particularly the case in the context of an application for authorisation, where effects on global competition between alliances are part of the claimed public benefits. This approach is consistent with that adopted by the Australian Trade Practices Tribunal in *Re Queensland Independent Wholesalers Ltd* (1995), where a broad geographic market was defined in order to highlight the location and focus of corporate and strategic decision making and the claimed public benefits.[208]

Is there a single market that includes domestic New Zealand, domestic Australia and Tasman routes?

We believe there is a single market for air passenger services provided domestically in New Zealand, Australia and on the Tasman.

On the demand side, there is limited scope for substitution, to the extent that the number of consumers likely to consider services between different city-pairs to be substitutes would not be sufficient to deter a SSNIP.

On the supply side, however, there are no legal or regulatory barriers that prevent Australian airlines providing services along Tasman and domestic New Zealand routes, as noted above in section 2.1.1. Similarly, there are no restrictions that prevent New Zealand airlines providing services along Tasman and domestic Australian routes.

It could be argued that there are significant investments that would prevent effective supply-side substitution. These investments would include route-specific sunk costs. The matter is open to debate and may also be slightly redundant, since our competitive effects analysis is performed at the city-pair level – the most conservative approach to analysing competitive effects – as well as at broader levels of aggregation.

Nevertheless, we do believe that there is some justification for suggesting that domestic New Zealand, domestic Australian and Tasman routes are provided in a single market from the perspective of commercial reality. It is clear that both Australian and New Zealand carriers have

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208 *Re Queensland Independent Wholesalers Ltd* (1995) 132 ALR, p. 225; (1995) ATPR , pp. 41–438.

placed considerable stress on the importance of providing service throughout the area, despite the substantial costs (and in the case of Air New Zealand's investment in Ansett, large losses) this involves. Interlining benefits may have been a factor in the short term, but long term considerations – perhaps best described as a view that the relevant segments of the market are merging – have undoubtedly dominated. We consequently believe that commercial reality is best captured by considering that these markets are integrated, though this does not directly affect our quantitative assessment of costs and benefits.

Alternatively, there are separate markets for domestic Australian and New Zealand services and Tasman services. If so, for the Tasman and Australia domestic markets, delineating markets at a level narrower than a market for all Tasman services would not materially assist in analysing competitive effects. It would also be inconsistent with considerations of supply side substitution. Once an airline has incurred the costs associated with establishing a presence on the Tasman, any further costs incurred in expanding to new Tasman routes are likely to be marginal in comparison. That is, these additional expenditures would not be so significant as to prevent effective supply side substitution in response to an attempted SSNIP on any given Tasman route.

With respect to the domestic Australia market, this is relevant largely for the purpose of analysing inter market issues, in particular, the importance of feeder traffic. Hence, for the purpose of this analysis, it seems sufficient to define a national market. However, as discussed below, it may be helpful to further delineate the New Zealand domestic market for the purpose of evaluating the effects of the Alliance.

In stating these views, we emphasise that our analysis of competitive effects is performed at the city-pair level in order to ensure our results are conservative. In this sense, the precise delineation of the relevant markets in which services are provided in Australia, New Zealand and on the Tasman is not crucial to our overall conclusions as to the net benefits of the Alliance.

Are there separate markets for main trunk services and other services in New Zealand?

In its Bodas determination, the NZCC defined separate geographic markets for main trunk services, those being services between the three major airports, and other services, which were deemed to be provided either in a provincial services market or in a tourist services market. The NZCC based this on the unique characteristics associated with services on these routes, including the volume of traffic on these routes and the size and types of aircraft used to maintain sufficient service frequency.

Considerations of demand and supply side substitution, as well as commercial reality, lead us to form a similar view to that formed by the NZCC. We believe that there is a distinct market for domestic main trunk services, though we believe that it is not necessary for the purpose of this analysis to distinguish between tourist services and other provincial services provided domestically in New Zealand.

There is likely to be only limited scope for demand side substitution between provincial and main trunk route services. On the supply side, it is clear that on some routes only jet aircraft or large turbo prop aircraft are capable of handling traffic volumes, at least at peak times. For instance, this is the case for services between the three major airports, AKL, WLG and CHC.

We note Air New Zealand tends to mainly use jet aircraft for services between AKL, WLG and CHC. It also uses AT2 aircraft, which are large turbo prop aircraft, and in limited instances, smaller DH8 aircraft. Origin Pacific uses a range of turbo prop aircraft to provide direct services between WLG and CHC, though it does operate a 64 seater ATR-72 on this route.

For services between AKL and CHC, it is also unlikely that a turbo prop – at least a smaller turbo prop – would be capable of providing a direct service with the degree of timeliness that would make consumers perceive a turbo prop service to be an adequate substitute for a jet service.

The efficiencies associated with using jet aircraft for services between AKL, WLG and CHC is reflected in Table 31, which shows the aircraft used by Air New Zealand to provide services between these three major airports and services provided on smaller provincial routes.

Table 31: Aircraft used by Air New Zealand: main trunk versus provincial

NZ main trunk	NZ provincial
737	Saab 340A
767	Beech 1900D
AT7	AT7
DH8	DH8
	Metroliner III
	Embraer Bandeirante

Source: www.airnz.co.nz; Air New Zealand Limited, Data Handbook 2001, p. 24.

In summary, we see it as unlikely that suppliers of services along provincial routes, which typically use smaller turbo-prop aircraft, would constrain a supplier of services between AKL, WLG and CHC, which tend to operate much larger turbo prop or jet aircraft. These supply side considerations suggest that services between AKL, WLG and CHC ought to be considered as being provided in a separate main trunk services market to most other services provided within New Zealand.

It could be argued that services between these three major airports and DUD and ZQN should also be included as part of a main trunk service market. For instance, although volumes on these routes are unquestionably lower than those on services between the three major airports, a combination of volume and aircraft capability still means that services provided along these routes tend to use larger turbo prop or jet aircraft. In addition, when reporting profitability results, Air New Zealand treats these services as part of its national trunk operations, as distinct from its Link operations.

In a sense, it seems unnecessary to form a firm view as to whether these services are part of the main trunk service market. In particular, our modelling of competitive detriments is presented at the city pair level, making the precise definition of the broader main trunk market somewhat irrelevant.

What are the relevant markets in which services on other international routes are provided?

The task of defining the relevant international markets can be simplified in this instance by the fact that the only routes directly affected by the Alliance are Tasman and Pacific Island routes, as well as routes to Los Angeles from Auckland, Sydney, Nadi and Papeete. The manner in which we undertake our analysis of competitive effects also simplifies the task of market definition.

As noted above, Tasman services are provided in a single market with Australian and New Zealand trunk services. However, if not, then our view is that Tasman services should be considered jointly as part of a single market. For Pacific Island services, the relevant market is likely to include *all* Pacific Island services due to demand side substitution. For a sizeable share of leisure travellers, different Island destinations are likely to be reasonably close substitutes in demand. Additionally, there may well be some scope for supply substitution, though rights defined under the ASAs are not common to all destinations. Again, however, the precise delineation of the geographic scope of the market in which air services to the Pacific Islands are provided does not ultimately impact on our overall analysis of competitive effects, since we analyse competitive effects at both the narrower city-pair level as well as at a more aggregated level.

Aside from the trans-Tasman and Pacific Island markets, the only other markets directly affected by the Alliance are services to Los Angeles from Auckland. The relevant question then becomes whether to define geographic markets narrowly on a city-pair basis (e.g. an Auckland–LA market), or at a broader level, for instance, on a country to region basis (e.g. a New Zealand–North America market), which is the view the ACCC currently holds.

As noted above, we do not believe it is necessary to form a firm view as to the relevant international markets for the purpose of this analysis. However, it is useful to consider the issue of the extent to which Australia and New Zealand end points should be considered to be in the same competitive sphere. In short, we do not believe this to be the case. For instance, we do not believe that the New Zealand-North America routes are necessarily in the same market as those linking Australia and North America. More particularly, the greater transit time involved in travelling to or from Auckland to Los Angeles via Sydney or Melbourne would limit the competitive discipline the indirect route would impose on the direct route from Auckland to Los Angeles. While there are some dual destination passengers, these will view the indirect route as superior to the direct route, and hence will not exercise a constraining influence on increases in the direct route fare. This is illustrated in QSI data provided by Air New Zealand for this route. For instance, the QSI for a direct AKL–LAX flight on a 747 is 2.0, while the QSI for a one-stop flight is 0.5. The QSI for a AKL–SYD–LAX or SYD–AKL–LAX differs depending on the type of connection: for online single

connections, interline single connections and online double connections, the QSIs are, respectively, 0.051, 0.0065, and 0.004.

As a result, we treat the routes from New Zealand to North America as falling in a distinct market as compared with routes from Australia to North America.

The geographic scope of freight markets

It is sufficient for the purposes of this analysis, to delineate the geographic markets for freight services as the same as those for air passenger services.

Having said this, we agree with the principles adopted in previous ACCC and NZCC decisions that, generally speaking, freight markets are likely to be broader than passenger markets. As the ACCC has previously observed, the transportation of freight is likely to be more conducive to indirect routing than the transportation of air passengers. The ACCC recognises that provided cargo arrives on time and in good condition, the precise means by which the cargo is transported to its destination is irrelevant.[209] Hence, defining the geographic scope of freight markets to be the same as that for air passenger service markets is likely to be a conservative.

A.4 Other relevant markets

It is relevant to consider the market in which travel agency services are provided. In many instances, air tickets form part of the overall package that consumers purchase from travel agents, however, travel agents play, and will likely continue to play, a quite distinct role from airlines. They bring together a number of disparate elements required by consumers as part of a total travel package, including accommodation, car hire and other ground transportation, tours, as well as airline transport. As such they provide a similar role to other retailers in providing consumers with a wide range and variety of products to choose from and combine, as well as advice on what products might best suit their needs. While this function is in some sense downstream from the provision of airline passenger services, it is probably more useful to think of travel agency services as a separate "value added" product market from simple airline passenger services. Indeed, as the

[209] RJSA determination, p. 43.

role of travel agents in the provision of simple ticket sales declines, these value added services will become an increasingly important part of a travel agent's business, as discussed in section 2.1.4.

For the purposes of this report, we define the market for travel agency services to be a value-added market in which travel agents supply an assortment of travel related products, including airline tickets, package these products and provide advice to consumers. Defining this market enables us to consider the extent to which competition in the provision of travel agency services might be directly affected through an increase in market concentration. It also enables to consider the extent to which increased concentration in air passenger service markets might facilitate the exercise of market power against travel agents.

In addition, it may be relevant to consider the markets in which inputs into air service markets are provided, particularly 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. Specifically, air passenger service markets 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.

Attachment A: Critical Loss Analysis

The purpose of this attachment is to demonstrate that business class passengers on Tasman and New Zealand domestic routes are not in a separate market from passengers on these routes who travel in the economy fare classes.

If these business class passengers did constitute a separate market, then a hypothetical monopolist over flights containing business class seats for these routes would be able to profitably impose a SSNIP on the business class passengers. This attachment will use the Critical Loss Analysis method developed by Harris and Simons, together with quantitative data confidentially provided by Qantas and Air New Zealand to demonstrate the likelihood that a SSNIP over business class airfares would be unprofitable for this hypothetical monopolist as a result of substitution to economy fare classes on the same aircraft and to rival carriers operating economy class-only flights on the same routes.

We proceed by outlining first the conceptual framework, followed by the mathematical formulation, quantification of the key variables, assessment of the likelihood of critical loss threshold being exceeded, then the conclusion.

Conceptual framework

The striking feature of this problem is the joint supply of business class and economy class journeys on the same aircraft. The joint supply of two products is not sufficient in itself to place them in the same market. Oil and natural gas are jointly supplied by many oil wells, but they sit within distinct product markets owing to the difficulty of demand-side substitution, and the limitations to supply-side substitution arising from the generally fixed proportions of oil and gas production at a particular well.

If business class journeys are in a separate market from the economy class journeys on the same routes, then a hypothetical firm which monopolised the flights which contain business class seats would be able to impose a SSNIP on the business class passengers profitably. Note that this hypothetical monopolist would offer economy class seats on these flights as well as the business class seats. There would be competition from economy class-only flights.

The critical loss framework requires an estimate of the average variable cost for the service in question. We believe that the average variable cost estimate should assume that the schedule of flights does not change before and after the SSNIP. This assumption appears valid given the fact that business class accounts for no more than 6% of tickets sold on the routes in question, as seen in the final table in this attachment. Thus, even if the business class SSNIP resulted in 100%

defection of business class customers to other carriers (the most extreme case possible), it would be unlikely the hypothetical monopolist would cancel any flights.

If the flight schedule is fixed then the major costs of running an airline, namely aircraft leasing and depreciation, fuel, flight crew, cabin crew, ground handling, administration, and MTOW-based airport charges would all be fixed. The only cost elements included in the average variable (per passenger) costs would be cost of ticket sales, passenger meals and beverages, and PAX-based airport charges.

These considerations make it likely that the contribution margins calculated below will be reasonably constant over the range of business class load factors considered here. Even in the extreme case that every business class passenger defected as a result of a SSNIP, the cost savings to the carrier would amount to little more than the variable costs already identified, namely cost of ticket sales, cost of passenger meals, and PAX-based airport charges. Any savings in the number of cabin crew required to serve business class would be offset by additional cabin crew needed to serve the additional economy class passengers. None of the major costs which are fixed per flight would be avoided.

Mathematical formulation

Following Harris and Simons, it is necessary first to establish the Contribution Margin for the product in question. This is defined as:

$$CM = (P0 - AVC) / P0$$

where CM is the Contribution Margin, AVC the average variable cost, and P0 is the initial price level (before the SSNIP is imposed). P0 is required to be the competitive price level, which can be assumed equal to the average cost (not the marginal cost as in simple models of perfect competition) for firms which have fixed costs.

The critical loss is the quantity of lost sales which would just make a price increase unprofitable. It represents a point of balance between the lost contribution margin on the sales lost because of the price increase, and the increased contribution from the higher post-SSNIP price on the remaining sales. The critical loss, X, expressed as a fraction of the initial sales is given by:

$$X = Y / (Y + CM)$$

where Y is the level of SSNIP, defined as $Y = (P1 - P0) / P0$.

Once the critical loss has been determined, it remains to establish whether substitution away from the SSNIPed product is likely to exceed the critical loss.

In this particular case we have the complication that, as a result of the business class SSNIP, some business class passengers may become economy class passengers on the same aircraft. When this happens, the hypothetical monopolist does not entirely lose the contribution margin from that business class defector. Instead the business class contribution margin is translated into an economy class contribution margin, which is likely to be lower but non-zero. This complication necessitates a further development of Harris and Simons logic.

Let B0 be the number of business class passengers prior to the SSNIP, and B1 be the number afterwards. At the critical loss, the gross contribution from business class passengers pre-SSNIP will just equal the gross contribution from business class passengers plus business class defectors remaining on the plane post-SSNIP:

$$B0 (P0 – AVC) = B1 (P1 – AVC) + (B0 – B1) (P0e – AVCe)$$

The last term represents the economy class contribution made by the business class defectors who, it is presumed conservatively, remained on the plane in economy class. This assumption is conservative because it leads to higher critical loss estimates – more business class sales must be lost to make the SSNIP unprofitable if the defectors remain on the plane. It is also conservative because it assumes the business class defectors are not displacing other economy class passengers who may be making a positive contribution. If such displacement takes place, then a smaller loss of business class sales will be unprofitable. This expression can be simplified as follows:

$$B0 * CM = B1 * (Y + CM) + (B0 – B1) * Z$$

where $Z = CMe * P0e / P0$

The subscripts ‘e’ refer to economy class. When these are omitted business class should be assumed. Manipulating this expression algebraically, and noting that

$$X = (B0 – B1) / B0,$$

this expression leads to the following modified critical loss formula:

$$X = Y / (Y + CM – Z)$$

To estimate Z it is necessary to know the economy class contribution margin and the initial economy class ticket price.

Quantification of key variables

Qantas provided per passenger variable costs and per passenger average revenues by aircraft type for the Tasman, New Zealand domestic, Pacific Island, and Los Angeles routes. This data is sufficient to calculate approximate contribution margins for Qantas for these routes. Table 32 below summarises this calculation.

Table 32: Qantas contribution margins by route

Routes	P0 (revenue per pax)	AVC (PAX variable costs)	CM = (P0-AVC)/P0
Tasman	$341	$75	78%
Domestic	$198	$61	69%
Pacific SH	$397	$67	83%
Pacific LH	$1,215	$157	87%

The average variable costs used in the table above were derived from a cost allocation model used by Qantas. If anything, this cost allocation model is likely to overstate the per passenger variability of costs. All of the directly per passenger activity costs would be captured in the model. However it is common in activity-based cost models to make somewhat arbitrary assignments to one of the chosen cost drivers of costs which may be fundamentally fixed. Thus if this method of estimating average variable costs is biased, that bias is likely to be towards overestimation, leading to an underestimate of the contribution margin.

As a further reality check on the average variable cost and contribution margin estimates, we also consider profit and loss data for Air New Zealand's Tasman routes for FY01, the average gross revenue per passenger across all these routes was $422. The cost of ticket sales plus the cost of 'raw food/beverages' per passenger was $103. Arguably these are the primary cost elements which vary directly with the number of passengers. Using these figures for P0 and AVC, the contribution margin would be 75%.

The range of critical loss values for various SSNIP levels and a Contribution Margins within the range estimated above is given in Table 33 below.

Table 33: Critical loss (%) at different SSNIP and Contribution Margin levels

SSNIP (%)	Contribution Margin		
	70%	80%	90%
1%	1.4%	1.2%	1.1%
5%	6.7%	5.9%	5.3%
10%	12.5%	11.1%	10.0%
20%	22.2%	20.0%	18.2%

Critical loss values in the table above assume that business class passengers ('bcp') defecting because of the SSNIP will defect to another airline. In reality that may not occur, given the importance of loyalty programs and other factors impeding switching. If the business class defectors remain on the same flight but in economy class, then the modified critical loss formula developed at the end of the previous section should be applied instead.

If the business class defector was on a full flight, then by moving to economy class, she will displace another passenger, presumably one in the lowest fare class. In this case, a further modification to the critical loss formula is needed. Following the same logic developed in the previous section, the further modified critical loss formula would be:

$$X = Y / (Y + CM – Z + W)$$

where $W = CMv * P0v / P0$

We have evaluated the parameters necessary to estimate these various critical loss formulae based on confidential information from Qantas and Air New Zealand on the Auckland–Sydney route. We have used fare class J for business class, fare class Y for economy class, and fare class V for the lowest fare category. We have assumed that the average variable costs for classes Y and V are the average cost of sales per passenger plus the average raw food/beverages cost per passenger. For class J (business class) we have assumed that the average variable cost is the average cost of sales per passenger plus twice the average raw food/beverage cost per passenger, to account for the higher quality of meals and availability of alcohol at no charge. These results are summarised in Table 34 below.

Table 34: Parameters for critical loss analysis for SYD - AKL return trip

Fare J return	$2001
Fare Y return	$1,585
Cost of sales one way	$71
Meal one way	$41
Business meal one way	$82
AVCe	$223
AVCb	$306
CMb	87%
CMe	86%
Z	59%
Fare V return	$585
CMv	62%
W = CMv * Pv / Pb	16%

Using these values, the following critical loss table is derived:

Table 35: SYD - AKL return trip: Critical losses at different SSNIP levels

	bcp goes to other carrier	bcp stays and flight not full	bcp stays but bumps low-yield passenger
@Y=	Y / (Y+CM)	Y / (Y+CM-Z)	Y / (Y+CM-Z+W)

1%	1.1%	3.5%	2.3%
5%	5.5%	15.4%	10.4%
10%	10.3%	26.7%	18.8%
20%	18.7%	42.1%	31.6%

Likelihood critical loss will be exceeded

Given the high contribution margins estimated above, relatively small losses of business class sales would be sufficient to make a SSNIP unprofitable for the hypothetical monopolist. To understand whether such losses are plausible, we consider the factors which might prevent this degree of substitution from taking place. There might be supply side constraints in the form of unavailability of alternative seats. There might also be demand side constraints in the form of poor acceptance by business travellers of economy cabin seating.

To examine the supply-side issue, we turn to some data shown in Table 36, which was provided by Qantas on the relative numbers of tickets sold in the various fare classes.

Table 36: Distribution of fare types for a sample of Qantas flights[210]

[210] The data relates to April 2002 and includes traffic in both directions. The traffic for Tasman routes is solely based on Tasman Services (ie, it does not include through services to EZE/LAX).

		Tasman operations		NZ domestic operations	
Cabin	Res Class	SYD / AKL (vv)	MEL / AKL (vv)	AKL / CHC (vv)	AKL / WLG (vv)
Business Class	D	3.7%	3.5%	0.6%	0.8%
	I	0.2%	0.1%	0.0%	0.0%
	J	2.2%	2.0%	0.3%	0.7%
Economy Class	B	9.2%	11.8%	1.2%	1.6%
	E	2.3%	1.9%	0.6%	0.7%
	G	14.0%	12.5%	12.3%	1.3%
	H	7.3%	7.8%	1.3%	1.0%
	K	4.3%	5.6%	10.9%	20.4%
	L	6.8%	4.4%	5.3%	6.4%
	M	16.5%	18.3%	2.9%	1.9%
	N	0.1%	0.0%	10.6%	5.0%
	O	2.0%	1.1%	33.2%	41.7%
	Q	7.9%	6.7%	1.1%	0.5%
	S	1.6%	2.2%	6.4%	10.7%
	T	0.6%	1.1%	0.2%	0.1%
	U	3.4%	2.8%	0.7%	0.4%
	V	6.5%	7.7%	6.1%	2.6%
	X	9.9%	9.5%	4.6%	2.7%
	Y	1.6%	1.1%	1.7%	1.6%
Total	Total	100.0%	100.0%	100.0%	100.0%

On the Tasman routes business class accounted for only 6% of tickets sold. On the New Zealand domestic routes, it accounted for less than 2%. We saw above that even a relatively large 10% SSNIP would only require a 26.7% loss of sales to make it unprofitable assuming the business class defectors all remained on the aircraft and no lower-yield passengers were bumped. A 26.7% loss

of business class sales represents only 1.6% (= 26.7% of 6%) of ticket sales on the Tasman routes. On a flight with 200 passengers, just over three passengers would have to switch from business class to economy class to defeat the SSNIP. If the defectors from business class all switched to another carrier, then only three would be needed to defeat a 20% SSNIP. Such a small number of defectors could easily be accommodated, so there appears to be no supply-side impediment to these critical loss thresholds being achieved.

Regarding the demand-side issues, it is helpful to review what factors distinguish business class travel from full economy class fare categories. Most attributes of the business class journey could be replicated by a firm selling economy cabin seats: ticket conditions, meal, beverage, and service options could all be readily replicated at an increase in variable cost which could be recouped from a relatively small adjustment to the airfare. Such an adjustment would still make the competitor's upgraded economy class ticket less costly than the hypothetical monopolist's post-SSNIP business class ticket.

The only aspect of business class travel which might require some modifications to the economy class cabin is the need for more spacious seating. It is unclear whether this is sufficiently important to prevent 26.7% of business class travellers from switching in response to a 10% SSNIP in business class.

If the space is sufficiently important to customer preferences, reconfiguration of the seating on an economy class-only aircraft need not pose an insurmountable obstacle for the competitors of the hypothetical monopolist. The practice of configuring rows of three economy class seats so they can be changed to two business class seats is relatively common. Even in the most extreme case, the investment required to reconfigure a section of the aircraft for larger business class seating is likely to be small compared to airline capital costs overall. Certainly this investment would not be sufficiently large-scale or long term to preclude its consideration within the timeframe normally considered for market definition.

Thus there is unlikely to be any strong demand-side impediment to business cabin passengers switching to a cabin which was previously economy class only, in order to defeat a business class SSNIP.

Conclusion

This analysis has examined the question of whether business class passengers constitute a separate market from economy class passengers. The empirical data relates to the trans-Tasman and New Zealand domestic markets, although the conclusions are likely to be robust for other passenger air transport markets as the cost structures of airlines are likely to be fairly similar worldwide.

The critical loss framework has been used to demonstrate that, as airline contribution margins are generally high, relatively small losses of sales would be sufficient to make a SSNIP unprofitable. This analytical tool has been applied to the hypothetical construct of a monopolist over business cabin ticket sales in the Tasman and NZ domestic markets. The examination of both supply-side and demand-side constraints to substitution from business cabin to economy cabin has led to the conclusion that the small critical loss thresholds are likely to be exceeded. Therefore, business class journeys are not in a separate market from economy class journeys.

Appendix B: Alliance market share, 3CR and 4CR, June 2002 to June 2003

		ANZ / SJ / QF / FJ	3CR	4CR
Tasman	AKL-SYD	80%	95%	98%
Tasman	AKL-MEL	100%	100%	100%
Tasman	AKL-BNE	57%	79%	90%
Tasman	WLG-SYD	100%	100%	100%
Tasman	WLG-MEL	100%	100%	100%
Tasman	WLG-BNE	100%	100%	100%
Tasman	CHC-SYD	100%	100%	100%
Tasman	CHC-MEL	100%	100%	100%
Tasman	CHC-BNE	100%	100%	100%
Tasman	AKL-PER	100%	100%	100%
Tasman	AKL-CNS	100%	100%	100%
Tasman	SYD-ZQN	100%	100%	100%
Tasman	AKL-NLK	100%	100%	100%
Tasman	AKL-NOU	40%	100%	100%
SH Pac	AKL-NAN	79%	100%	100%
SH Pac	AKL-APW	68%	100%	100%
SH Pac	AKL-TBU	39%	100%	100%
SH Pac	AKL-RAR	100%	100%	100%
SH Pac	AKL-PPT	55%	100%	100%
LH Pac	NAN-LAX	100%	100%	100%
SH Pac	TBU-APW	43%	100%	100%
LH Pac	APW-LAX	100%	100%	100%
LH Pac	RAR-LAX	100%	100%	100%
LH Pac	PPT-LAX	22%	100%	100%
SH Pac	NAN-RAR	100%	100%	100%
SH Pac	RAR-PPT	100%	100%	100%
LH Pac	AKL-HNL	100%	100%	100%
LH Pac	AKL-LAX	100%	100%	100%

Atlantic	LAX-LHR	17%	78%	90%
Asia	AKL-SIN	37%	100%	100%
Asia	AKL-HKG	48%	100%	100%
Asia	AKL-TPE	50%	100%	100%
Japan	AKL-NRT	100%	100%	100%
Japan	AKL-KIX	100%	100%	100%
Japan	AKL-NGO	100%	100%	100%
Domestic	AKL-WLG	100%	100%	100%
Domestic	AKL-CHC	100%	100%	100%
Domestic	AKL-DUD	100%	100%	100%
Domestic	CHC-WLG	79%	100%	100%
Domestic	CHC-ZQN	60%	100%	100%
Domestic	AKL-ZQN	100%	100%	100%
LH Pac	SYD-LAX	73%	100%	100%
Domestic	WLG-DUD	100%	100%	100%

Notes: Market shares based on forecast capacity for the June 2002 to June 2003 period. Note that Air New Zealand data includes Freedom Air and Qantas includes Pacific Air. United is included as part of Air New Zealand for the Auckland–LA route.

Appendix C: Air New Zealand and Qantas Factual Schedules

Year 1: weekly departures

	Airline	AirNZ						QF & FJ						
	Craft	B733A	B733D	B744	B763	B762	B738 / A320	B744Q	B743	B742	B763Q	B738	A333	B733Q
	Seats	122	136	392	230	200	146	432	420	433	236	154	340	116
Tasman	AKL-SYD	0	0	14	0	0	42	12	14	0	28	0	0	8
Tasman	AKL-MEL	0	0	0	0	0	42	0	0	0	32	0	0	0
Tasman	AKL-BNE	0	0	0	0	0	14	14	0	0	0	0	0	0
Tasman	WLG-SYD	0	0	0	0	0	20	0	0	0	0	0	0	28
Tasman	WLG-MEL	14	0	0	0	0	0	0	0	0	0	0	0	10
Tasman	WLG-BNE	0	0	0	0	0	0	0	0	0	0	0	0	6
Tasman	CHC-SYD	0	0	0	20	0	0	0	0	0	36	0	0	10
Tasman	CHC-MEL	14	0	0	0	0	0	0	0	0	8	0	0	4
Tasman	CHC-BNE	6	0	0	0	0	0	0	0	0	4	0	0	2
Tasman	AKL-PER	0	0	0	8	0	0	0	0	0	0	0	0	0
Tasman	AKL-CNS	0	0	0	6	0	0	0	0	0	0	0	0	0
Tasman	SYD-ZQN	0	4	0	0	0	0	0	0	0	0	0	0	2
Tasman	AKL-NLK	0	4	0	0	0	0	0	0	0	0	0	0	0
Tasman	AL-KNOU	0	4	0	0	0	0	0	0	0	0	0	0	0
SH Pac	AKL-NAN	0	0	0	8	0	10	0	0	0	0	18	0	0
SH Pac	AKL-APW	0	0	0	6	0	0	0	0	0	0	0	0	0
SH Pac	AKL-TBU	0	6	0	4	0	0	0	0	0	0	0	0	0

SH Pac	AKL-RAR	0	0	0	8	0	4	0	0	0	0	0	0	0
SH Pac	AKL-PPT	0	0	0	8	0	0	0	0	0	0	0	0	0
LH Pac	NAN-LAX	0	0	0	4	0	0	0	0	8	0	0	0	0
SH Pac	TBU-APW	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	APW-LAX	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	RAR-LAX	0	0	0	4	0	0	0	0	0	0	0	0	0
LH Pac	PPT-LAX	0	0	0	6	0	0	0	0	0	0	0	0	0
SH Pac	NAN-RAR	0	0	0	2	0	0	0	0	0	0	0	0	0
SH Pac	RAR-PPT	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	AKL-HNL	0	0	0	6	0	0	0	0	0	0	0	0	0
LH Pac	AKL-LAX	0	0	28	0	0	0	20	0	0	0	0	0	0
Atlantic	LAX-LHR	0	0	14	0	0	0	0	0	0	0	0	0	0
Asia	AKL-SIN	0	0	8	6	0	0	0	0	0	0	0	0	0
Asia	AKL-HKG	0	0	0	14	0	0	0	0	0	0	0	0	0
Asia	AKL-TPE	0	0	0	4	0	0	0	0	0	0	0	0	0
Japan	AKL-NRT	0	0	14	0	0	0	0	0	0	0	0	0	0
Japan	AKL-KIX	0	0	0	14	0	0							
Japan	AKL-NGO	0	0	0	8	0	0							
Domestic	AKL-WLG	0	210	0	0	0	0	0	0	0	0	0	0	152
Domestic	AKL-CHC	0	178	0	0	0	0	0	0	0	0	0	0	140
Domestic	AKL-DUD	0	14	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-WLG	0	118	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-ZQN	0	28	0	0	0	0	0	0	0	0	0	0	0

Domestic	AKL-ZQN	0	26	0	0	0	0	0	0	0	0	0	0	4
LH Pac	SYD-LAX	0	0	10	0	0	0	56	0	0	0	0	0	0
Domestic	WLG-DUD	0	26	0	0	0	0	0	0	0	0	0	0	0
Tasman	ALL	34	12	14	32	0	118	26	14	0	108	0	0	70
Domestic	ALL	0	600	0	0	0	0	0	0	0	0	0	0	296
SH Pac	ALL	0	6	0	40	0	14	0	0	0	0	18	0	0
Asia	ALL	0	0	22	46	0	0	0	0	0	0	0	0	0
LH Pac	ALL	0	0	38	22	0	0	76	0	8	0	0	0	0
Atlantic	ALL	0	0	14	0	0	0	0	0	0	0	0	0	0
		34	618	88	140	0	144	92	14	8	102	18	0	428

Year 2: weekly departures

	Airline	AirNZ						QF & FJ						
	Craft	B733A	B733D	B744	B763	B762	B738 / A320	B744Q	B743	B742	B763Q	B738	A333	B733Q
	Seats	122	136	392	230	200	146	432	420	433	236	154	340	116
Tasman	AKL-SYD	0	0	14	0	0	42	14	14	0	28	0	0	8
Tasman	AKL-MEL	0	0	0	0	0	42	0	0	0	32	0	0	0
Tasman	AKL-BNE	0	0	0	0	0	14	14	0	0	0	0	0	0
Tasman	WLG-SYD	0	0	0	0	0	20	0	0	0	14	0	0	0
Tasman	WLG-MEL	0	0	0	0	0	14	0	0	0	0	0	0	10
Tasman	WLG-BNE	0	0	0	0	0	0	0	0	0	6	0	0	2
Tasman	CHC-SYD	0	0	0	0	0	28	0	0	0	36	0	0	6
Tasman	CHC-MEL	0	0	0	0	0	14	0	0	0	8	0	0	4

Tasman	CHC-BNE	0	0	0	0	0	6	0	0	0	4	0	0	2
Tasman	AKL-PER	0	0	0	10	0	0	0	0	0	0	0	0	0
Tasman	AKL-CNS	0	0	0	4	0	0	0	0	0	0	0	0	0
Tasman	SYDZ-QN	0	0	0	0	0	4	0	0	0	0	0	0	2
Tasman	AKL-NLK	0	4	0	0	0	0	0	0	0	0	0	0	0
Tasman	AKL-NOU	0	4	0	0	0	0	0	0	0	0	0	0	0
SH Pac	AKL-NAN	0	0	0	8	0	10	0	0	0	0	18	0	0
SH Pac	AKL-APW	0	0	0	6	0	0	0	0	0	0	0	0	0
SH Pac	AKL-TBU	0	6	0	4	0	0	0	0	0	0	0	0	0
SH Pac	AKL-RAR	0	0	0	6	0	8	0	0	0	0	0	0	0
SH Pac	AKL-PPT	0	0	0	8	0	0	0	0	0	0	0	0	0
LH Pac	NAN-LAX	0	0	0	4	0	0	0	0	8	0	0	0	0
SH Pac	TBU-APW	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	APW-LAX	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	RAR-LAX	0	0	0	4	0	0	0	0	0	0	0	0	0
LH Pac	PPT-LAX	0	0	0	6	0	0	0	0	0	0	0	0	0
SH Pac	NAN-RAR	0	0	0	2	0	0	0	0	0	0	0	0	0
SH Pac	RAR-PPT	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	AKL-HNL	0	0	0	6	0	0	0	0	0	0	0	0	0
LH Pac	AKL-LAX	0	0	32	0	0	0	14	0	0	0	0	0	0
Atlantic	LAX-LHR	0	0	14	0	0	0	0	0	0	0	0	0	0
Asia	AKL-SIN	0	0	8	6	0	0	0	0	0	0	0	0	0
Asia	AKL-HKG	0	0	0	14	0	0	0	0	0	0	0	0	0
Asia	AKL-TPE	0	0	0	6	0	0	0	0	0	0	0	0	0
Japan	AKL-NRT	0	0	14	0	0	0	0	0	0	0	0	0	0

Japan	AKL-KIX	0	0	0	14	0	0							
Japan	AKL-NGO	0	0	0	10	0	0							
Domestic	AKL-WLG	0	210	0	0	0	0	0	0	0	0	0	0	152
Domestic	AKL-CHC	0	178	0	0	0	0	0	0	0	0	0	0	140
Domestic	AKL-DUD	0	14	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-WLG	0	118	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-ZQN	0	28	0	0	0	0	0	0	0	0	0	0	0
Domestic	AKL-ZQN	0	26	0	0	0	0	0	0	0	0	0	0	4
LH Pac	SYD-LAX	0	0	10	0	0	0	56	0	0	0	0	0	0
Domestic	WLG-DUD	0	26	0	0	0	0	0	0	0	0	0	0	0
Tasman	ALL	0	8	14	14	0	184	28	14	0	128	0	0	348
Domestic	ALL	0	600	0	0	0	0	0	0	0	0	0	0	296
SH Pac	ALL	0	6	0	38	0	18	0	0	0	0	18	0	0
Asia	ALL	0	0	22	50	0	0	0	0	0	0	0	0	0
LH Pac	ALL	0	0	42	22	0	0	76	0	8	0	0	0	0
Atlantic	ALL	0	0	14	0	0	0	0	0	0	0	0	0	0

Year 3: weekly departures

	Airline	AirNZ						QF & FJ						
	Craft	B733A	B733D	B744	B763	B762	B738 / A320	B744Q	B743	B742	B763Q	B738	A333	B733Q
	Seats	122	136	392	230	200	146	432	420	433	236	154	340	116
Tasman	AKL-SYD	0	0	14	0	0	48	14	14	0	28	0	0	6
Tasman	AKL-MEL	0	0	0	0	0	50	0	0	0	32	0	0	0

Tasman	AKL-BNE	0	0	0	0	0	14	14	0	0	0	0	0	0
Tasman	WLG-SYD	0	0	0	0	0	20	0	0	0	14	0	0	0
Tasman	WLG-MEL	0	0	0	0	0	0	0	0	0	14	0	0	0
Tasman	WLG-BNE	0	0	0	0	0	0	0	0	0	6	0	0	0
Tasman	CHC-SYD	0	0	0	0	0	28	0	0	0	38	0	0	0
Tasman	CHC-MEL	0	0	0	0	0	14	0	0	0	12	0	0	0
Tasman	CHC-BNE	0	0	0	0	0	0	0	0	0	6	0	0	0
Tasman	AKL-PER	0	0	0	10	0	0	0	0	0	0	0	0	0
Tasman	AKL-CNS	0	0	0	4	0	0	0	0	0	0	0	0	0
Tasman	SYD-ZQN	0	0	0	0	0	4	0	0	0	0	0	0	2
Tasman	AKL-NLK	0	4	0	0	0	0	0	0	0	0	0	0	0
Tasman	AKL-NOU	0	4	0	0	0	0	0	0	0	0	0	0	0
SH Pac	AKL-NAN	0	0	0	8	0	12	0	0	0	0	18	0	0
SH Pac	AKL-APW	0	0	0	8	0	0	0	0	0	0	0	0	0
SH Pac	AKL-TBU	0	6	0	4	0	0	0	0	0	0	0	0	0
SH Pac	AKL-RAR	0	0	0	6	0	8	0	0	0	0	0	0	0
SH Pac	AKL-PPT	0	0	0	10	0	0	0	0	0	0	0	0	0
LH Pac	NAN-LAX	0	0	0	6	0	0	0	0	8	0	0	0	0
SH Pac	TBU-APW	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	APW-LAX	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	RAR-LAX	0	0	0	4	0	0	0	0	0	0	0	0	0
LH Pac	PPT-LAX	0	0	0	8	0	0	0	0	0	0	0	0	0
SH Pac	NAN-RAR	0	0	0	2	0	0	0	0	0	0	0	0	0
SH Pac	RAR-PPT	0	0	0	2	0	0	0	0	0	0	0	0	0
LH Pac	AKL-HNL	0	0	0	6	0	0	0	0	0	0	0	0	0

LH Pac	AKL-LAX	0	0	32	0	0	0	20	0	0	0	0	0	0
Atlantic	LAX-LHR	0	0	14	0	0	0	0	0	0	0	0	0	0
Asia	AKL-SIN	0	0	14	0	0	0	0	0	0	0	0	0	0
Asia	AKL-HKG	0	0	8	6	0	0	0	0	0	0	0	0	0
Asia	AKL-TPE	0	0	0	6	0	0	0	0	0	0	0	0	0
Japan	AKL-NRT	0	0	14	0	0	0	0	0	0	0	0	0	0
Japan	AKL-KIX	0	0	0	14	0	0							
Japan	AKL-NGO	0	0	0	14	0	0							
Domestic	AKL-WLG	0	210	0	0	0	0	0	0	0	0	0	0	152
Domestic	AKL-CHC	0	178	0	0	0	0	0	0	0	0	0	0	140
Domestic	AKL-DUD	0	14	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-WLG	0	118	0	0	0	0	0	0	0	0	0	0	0
Domestic	CHC-ZQN	0	28	0	0	0	0	0	0	0	0	0	0	0
Domestic	AKL-ZQN	0	26	0	0	0	0	0	0	0	0	0	0	4
LH Pac	SYD-LAX	0	0	0	0	0	0	56	0	0	0	0	0	0
Domestic	WLG-DUD	0	26	0	0	0	0	0	0	0	0	0	0	0
Tasman	ALL	0	8	14	14	0	178	28	14	0	150	0	0	10
Domestic	ALL	0	600	0	0	0	0	0	0	0	0	0	0	296
SH Pac	ALL	0	6	0	42	0	20	0	0	0	0	18	0	0
Asia	ALL	0	0	36	42	0	0	0	0	0	0	0	0	0
LH Pac	ALL	0	0	32	26	0	0	76	0	8	0	0	0	0
Atlantic	ALL	0	0	14	0	0	0	0	0	0	0	0	0	0

Confidential Appendix D: Air New Zealand and Qantas counterfactual schedules

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Appendix E: Modelling Details and Sensitivity Testing

The key inputs into the model are the schedules for the factual and counterfactual. These constitute the number of departures per city-pair, per carrier, per week and are presented in Appendices C and D above.

Another key set of inputs is the business and leisure price elasticities. These are generic parameters across all city-pairs which are then weighted by their applicable shares of business and leisure travellers for each city-pair and averaged to arrive at the price elasticity specific to that city-pair. Given this process, and the fact that the business and leisure shares are obtained from historical data, the parameters of interest are the price elasticities of business and leisure travellers; as such it is these which are subject to sensitivity testing below. The shares of each passenger type by city-pair are reported in Table 37 below.

Table 37: Business and leisure shares of travellers by city-pair

	Business share	Leisure share
AKL-SYD	37%	63%
AKL-MEL	35%	65%
AKL-BNE	24%	76%
WLG-SYD	39%	61%
WLG-MEL	36%	64%
WLG-BNE	22%	78%
CHC-SYD	28%	72%
CHC-MEL	28%	72%
CHC-BNE	21%	79%
AKL-PER	30%	70%
AKL-CNS	25%	75%
SYD-ZQN	32%	68%
AKL-NLK	21%	79%
AKL-NOU	15%	85%
AKL-NAN	15%	85%

	Business share	Leisure share
AKL-APW	20%	80%
AKL-TBU	18%	82%
AKL-RAR	16%	84%
AKL-PPT	18%	82%
NAN-LAX	15%	85%
TBU-APW	15%	85%
APW-LAX	15%	85%
RAR-LAX	15%	85%
PPT-LAX	15%	85%
NAN-RAR	15%	85%
RAR-PPT	15%	85%
AKL-HNL	20%	80%
AKL-LAX	30%	70%
LAX-LHR	30%	70%
AKL-SIN	20%	80%
AKL-HKG	25%	75%
AKL-TPE	20%	80%
AKL-NRT	10%	90%
AKL-KIX	10%	90%
AKL-NGO	10%	90%
AKL-WLG	65%	35%
AKL-CHC	49%	51%
AKL-DUD	48%	52%
CHC-WLG	56%	44%
CHC-ZQN	56%	44%
AKL-ZQN	41%	59%
SYD-LAX	25%	75%
WLG-DUD	54%	46%

Sensitivity Testing

This section reports the sensitivity analysis as carried out on the key parameters contained within the model. All sensitivity tests are carried out under the VBA entry scenario for both the factual

and the counterfactual. We begin with all parameters set at their default (or base) values. We then carry out sensitivity tests where each parameter is varied within a reasonable range of the 'base case' value, *ceteris paribus*, such that the effect of that parameter may be analysed in isolation from any potential offsetting or compounding affects of the other parameters.

Before presenting the sensitivity results we summarise here for completeness the values that each parameter is assigned as its base value. These are presented in Table 38 below.

Table 38: Base case values

Parameter		Value
Natural growth:	Tasman	4.4%
	Domestic	3.4%
	SH Pac	5.0%
	Asia	8.0%
	LH Pac	4.0%
	Atlantic	4.0%
Price elasticities:	Business	-0.7
	Leisure	-1.65
Capacity elasticity		0.125
VBA / FSA cost differential		20%
VBA+ / FSA cost differential		7.50%

Natural (or trend) growth rate of the air travel market

In the model below we have specified growth rates on a regional basis (i.e. individual parameters for Tasman, domestic etc). However, we present here the effect of increasing (and decreasing) all growth rates by the same number of percentage points such that the aggregate (or global) effect of changes in the growth rate of the air travel market is obtained. We analyse the sensitivity of the model to changes in the base growth rates of plus and minus 2 percentage points. For example, if the base growth rate is 4% p.a. we test values from 2% p.a. to 6% p.a. The results of this are presented in Table 39.

Table 39. Effect of Natural Growth Rate

	Growth rate increased by 2 percentage points			Growth rate decreased by 2 percentage points		
Year	Total benefits	Total detriments	Total trade off	Total benefits	Total detriments	Total trade off
1	$179	$59	$121	$179	$54	$125
2	$482	$26	$455	$483	$23	$460
3	$671	$18	$653	$676	$15	$660
4	$643	$20	$623	$646	$15	$631
5	$605	$20	$585	$609	$15	$594
Total	$2,579	$143	$2,437	$2,593	$123	$2,470

The price elasticity of travellers

To analyse the impact of changes in the price elasticity of demand we increased and decreased the elasticity of both the business and leisure travellers by plus and minus 0.2.

Table 40: Effect of price elasticities

	Price elasticity increased by -0.2			Price elasticity decreased by 0.2		
Year	Total benefits	Total detriments	Total trade off	Total benefits	Total detriments	Total trade off
1	$179	$47	$133	$179	$71	$108
2	$483	$18	$464	$483	$34	$448
3	$674	$11	$662	$674	$24	$649
4	$644	$11	$632	$644	$24	$620
5	$607	$11	$595	$607	$24	$583
Total	$2,586	$100	$2,486	$2,586	$178	$2,408

The capacity elasticity of demand

To examine the effect of changes in this parameter we varied its base value by plus and minus 0.02, the results of which are presented in Table 41 below.

Table 41: Effect of capacity elasticity

	Capacity elasticity increased by 0.02			Capacity elasticity decreased by 0.02		
Year	Total benefits	Total detriments	Total trade off	Total benefits	Total detriments	Total trade off
1	$179	$56	$123	$179	$57	$123
2	$483	$24	$457	$483	$25	$456
3	$672	$17	$655	$674	$16	$657
4	$644	$17	$626	$645	$16	$628
5	$607	$17	$590	$608	$17	$591
5 yr Total	$2,586	$132	$2,453	$2,589	$132	$2,456

FSA/VBA cost differential

The sensitivity of the model to this parameter was examined by varying the base value by plus and minus 10 percentage points. The results of this analysis are presented in Table 42.

Table 42: Effect of VBA/FSA cost differential on Tasman and domestic

	VBA cost differential increased by 10 percentage points			VBA cost differential decreased by 10 percentage points		
Year	Total benefits	Total detriments	Total trade off	Total benefits	Total detriments	Total trade off
1	$179	$49	$130	$179	$63	$116
2	$483	$15	$468	$483	$36	$447
3	$674	$7	$667	$674	$28	$646
4	$644	$7	$637	$644	$26	$617
5	$607	$7	$600	$607	$26	$580

Total	$2,587	$86	$2,501	$2,586	$180	$2,406

FSA/VBA+ cost differential

This parameter was analysed by incrementing the base value by plus and minus 5 percentage points. Table 43 summarises the results of this analysis.

Table 43: Effect of VBA+/FSA cost differential on domestic

	VBA cost differential increased by 5 percentage points			VBA cost differential decreased by 5 percentage points		
Year	Total benefits	Total detriments	Total trade off	Total benefits	Total detriments	Total trade off
1	$179	$59	$122	$179	$55	$124
2	$483	$26	$456	$483	$24	$459
3	$674	$18	$655	$674	$16	$657
4	$644	$18	$626	$644	$16	$628
5	$607	$18	$590	$607	$16	$591
Total	$2,586	$138	$2,448	$2,586	$126	$2,460

Confidential Appendix F: Alternative counterfactual

While both airlines believe that in the absence of the Alliance they will continue to compete aggressively, it is not clear that such a situation could be sustained even over the period being analysed. In particular, the losses that Air New Zealand currently sustains on its Tasman and long-haul operations would become increasingly difficult to subsidise from its domestic profits, as Qantas continued to grow and compete aggressively in domestic New Zealand.

In the absence of substantial Government funding, the relative strengths of the airlines suggest that it would be Air New Zealand that would be forced to scale back its operations and in the longer-term possibly exit the market entirely. Without knowing the Government's intentions with respect to the funding of Air New Zealand to compete with Qantas, we have assumed it would be Air New Zealand that would retract its operations in response to sustained competitive pressure from Qantas domestically and Qantas and other airlines internationally. Hence, we requested Air New Zealand to provide NECG with the counterfactual schedule that it would most likely implement in the event that it could no longer sustain its full service operations. In this appendix, we set out the details of this counterfactual and its implications for New Zealand.

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The implications for the welfare of New Zealand depend on the response of other airlines to Air New Zealand's weakened position. If other airlines move quickly to replace the capacity of Air New Zealand then there may be limited detriment in terms of available capacity. The impact on price will depend on which airline fills the Air New Zealand void. For example, if Qantas moves to fill any reduction in Air New Zealand capacity then the outcome for consumers is likely to be very close to the outcome of the Alliance, but without a national flag carrier. This is more likely to be the case on the Tasman, domestic New Zealand and Pacific routes (via Air Pacific). If another airline moves to fill the vacated capacity, such as Singapore, United or a VBA, then there may be little difference in the level of competition between this counterfactual and the increased competition counterfactual, the only difference being that the competition is provided by other airlines, not Air New Zealand.

Having said that, there are some important implications for New Zealand of this scenario eventuating. Alternative carriers are not going to be either willing or able to provide the same

support for in-bound tourism, as they will not have the range of long haul services that Air New Zealand has. As a result, we would expect that the substantial share of the burden of tourism promotion that is now borne by Air New Zealand would need to be shifted onto the New Zealand government.

Additionally, only Air New Zealand has rights to provide the direct flights that currently account for the bulk of New Zealand air freight. Were Air New Zealand to retrench on the scale set out above, we would expect freight availability to decline.

Appendix G: Cournot Competition and the Airline Industry

This section outlines the empirical and theoretical support for the usage of Cournot competition as a model of oligopolistic behaviour in the airline industry. Economists frequently use the Cournot model of oligopoly because it is a relatively simple, tractable and coherent theoretical framework. Several recent papers analysing the airline industry have used models based on Cournot competition, including Clougherty (2002), Brueckner (2001), and Haugh and Hazledine (1999). In general, a model should be judged not by its assumptions but by what it can explain. In this light, both empirical and theoretical support for the Cournot model is discussed here. Some alternatives to Cournot competition are briefly considered.

Empirical support

Two papers by James Brander and Anming Zhang (1990, 1993) empirically estimate conduct parameters (or 'conjectural variations') for a set of duopoly airline routes in the United States. The earlier paper is a static analysis using cross-sectional data, while the latter is a dynamic analysis using panel data.

In the first paper, Brander and Zhang set up a framework that under different parameterisations allows for a Bertrand, Cournot, or cartel-type duopoly. They investigate which of these frameworks is supported by data on 33 Chicago-based airline routes served by United Airlines and American Airlines for the third quarter of 1985. Their main overall finding is that the Cournot model receives the best support from the data. In particular, they conclude on p. 580 that:

> … we found strong evidence against the cartel hypothesis and against the highly competitive Bertrand hypothesis. Cournot behavior falls within what we take to be the plausible range for this set of markets, taking into account the various errors and approximations that underlie our reasoning.

In their second paper, Brander and Zhang perform a more complex dynamic analysis using cross-sectional data. The time-series element of the data allows for more complex competitive structures to be incorporated in their analysis. In particular, they allow for regime-switching models (see, for example, Green and Porter (1984)) in which firms switch between periods of tacit collusion and punishment. Brander and Zhang again empirically investigate a conjectural variations type framework, using data on 16 Chicago-based city-pairs from the fourth quarter of 1984 to the fourth quarter of 1988. In general they found that the regime-switching models were most appropriate,

and commented that the airlines' behaviour in punishment phases was much closer to the Cournot outcome than the Bertrand outcome.

Theoretical support

The Cournot model assumes that firms choose outputs and then the market price adjusts to equate demand with supply. This may seem unrealistic because we usually think of firms choosing prices rather than quantities. However, a theoretical paper by Kreps and Schienkman (1983) showed that if firms do indeed compete in prices but are capacity constrained, then the mode of competition is equivalent to Cournot.

In particular, if firms must first choose and commit to a capacity level before competing in prices, then the outcome of this two-stage game is equivalent to the outcome of a traditional one-stage Cournot game in which firms just choose quantities. This result of course depends on the capacities that are chosen in the first stage being 'sunk', so that they have commitment value. This assumption is obviously violated in any industry after a long enough time period has elapsed so that capacities can be changed. Airlines are no exception, and for any given route it should be relatively easily for an airline to reallocate its resources so as to quickly increase or decrease capacity on that route. However, the airline as a whole is likely to be somewhat capacity-constrained in the medium term as changing its overall capacity will require changing the size of its aircraft fleet, which is costly.

Consideration of alternatives

Alternatives to Cournot competition do exist, and in this section we compare possible alternatives with the Cournot framework.

First, it seems not unreasonable to assert that airlines do have some market power. That is, they have some ability to raise their price above that of their rival(s) without losing their entire market share. This rules out ordinary Bertrand competition as a model of the airline industry.

Instead, we could imagine that airlines' market power comes from branding, or 'horizontal differentiation'. Airlines essentially sell a homogeneous product, but have some ability to raise

prices because consumers perceive them as being different.[211] The typical approach to modelling such an industry is to use a location or 'Hotelling' type model where firms and consumers are positioned in a 'product space'. Such a model may seem appropriate for the airline industry in which airlines position themselves as being 'full service' or 'value based', or by using marketing to distinguish themselves from competitors.

The downside of such models is that they are difficult to apply and generate empirical predictions from, as they require a number of parameters to be estimated (namely, the 'location' of each firm in the product space). This difficulty increases with the number of firms, and leads to greater data requirements and further possibilities for estimation errors.

Thus the Cournot model has an advantage over horizontal differentiation models in that it captures the realistic feature that firms have some market power, without making the framework unnecessarily complicated and without requiring a large number of parameters to be estimated.

Finally, it is worth noting that, given the characteristics of the relevant markets, the Cournot model is more appropriate that an alternative "dominant firm facing a competitive fringe" model.

The dominant firm facing a competitive fringe model is relevant in industries characterised by one large firm (dominant firm) with a large market share and many smaller firms (competitive fringe) with very small market shares each.

For the dominant firm, the strategic trade-off[212] is that a high price may increase profit per unit sold but decrease the quantity the dominant firm can sell for two reasons:

- market demand decreases with price; and
- the fringe's supply increases with price

Under general conditions[213], all firms, including the competitive fringe, make positive profits. The profit of the dominant firm is lower than it would be without the competition from the fringe,

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211 Petrol stations and soft drinks are other examples where horizontal differentiation is prevalent.

212 this explains the kink of the residual demand curve

213 The model and the general conditions are presented, for example, in Carlton D W and Perloff J M, 1990, *Modern Industrial Organization*, Harper Collins, at pages 185 onward.

because the residual demand[214] is less than the market demand, which implies that the price is lower than if the dominant firm had a monopoly position. On the other hand, and more importantly, the profit of the dominant firm is higher than it would be under a Cournot competition, with other firms having some degree of market power rather than passively and competitively following the lead of the dominant firm.

Accordingly, the dominant firm facing a competitive fringe is an intermediate situation between the monopoly case and Cournot competition – this is relevant both for the profit of the dominant firm and for the corresponding deadweight losses.

Even if there is a significant difference in the ratios of biggest firm / group to the second firm / group between the factual and counterfactual (as there indeed is in some cases in the model), it would not be appropriate to assess the Alliance using to the "dominant firm facing a competitive fringe" rather than the Cournot model. There are a number of reasons for this.

First, the "dominant firm facing a competitive fringe" model is based on the dominant firm being a price setter, optimising for the output of the fringe. The fringe on the other hand plays only a passive role in price setting. The theoretical problem associated with such strategic interactions is that there is no justification for that assumption. It is consequently difficult, if not impossible, to characterise the outcome as a Nash Equilibrium, if there is no exogenous explanation for, or constraints on, the behaviour of the non-dominant firm.

Second, a practical difficulty with the "dominant firm facing a competitive fringe" is that the outcomes are extremely sensitive to the choice of the elasticity of supply of the competitive fringe – that is, the form of their supply curve. This is because the constraint imposed on the dominant firm depends on the reaction of the fringe to the price behaviour of the dominant firm. In other words, the extent to which the fringe's supply increases with price affects the trade-off of the dominant firm, as explained above. Under such circumstances, any outcome of this alternative modelling would be highly hypothetical – especially because no data is available, which in turn is due to the inapplicability of the model to the relevant markets.

Third, the model is indeed not consistent with the structure of the relevant markets. This is because the "dominant firm facing a competitive fringe" by definition is characterised by a competitive fringe. This is not the case on the route at issue. Even if the largest firm / group is

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214 That is, the market demand curve net of the supply of the competitive fringe.

significantly larger than the second firm / group, the latter is not a competitive fringe – there is only one other market player in most case. This is crucial since the passivity of the competitive fringe is eventually explained by its atomistic size. This is obviously not the case for firms serving around 20% of the market.

Finally, it is worth noting that the asymmetry in the market shares is taken into account in the Cournot model used for the assessing the Alliance, which is why this model is widely used in the aviation industry and has found empirical support in the literature.

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