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Critique of the NECG Report on the Qantas Air New Zealand Alliance

Report prepared for Gilbert & Tobin

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1. Introduction

Frontier Economics has been asked by Gilbert & Tobin for its opinion of the NECG Report that Qantas and Air New Zealand (ANZ) rely on in their applications ('the Applications') for authorisation before the Australian Competition and Consumer Commission (ACCC) and the New Zealand Commerce Commission (NZCC) of their proposed coordination and integration of services ('the proposed alliance').[1] This report is that opinion. This report is arranged in the following sections:

- The Proposed 'With' and 'Without' Scenarios;
- The Relevant Markets;
- The Modelling of Detriment Caused by Lessening of Competition;
- The Claimed Net Public Benefits; and
- Conclusions.

All page references are to the NECG Report, unless the contrary is indicated.

As discussed in this report, we consider there are significant problems with the analysis outlined in the NECG Report. We question the scenarios that NECG uses as the basis for its modelling of the future with the proposed alliance and the future without the proposed alliance (referred to as the 'with' and 'without' scenarios in the remainder of this report). We also question the logic of some of the modelling itself. In summary, we consider that:

- The 'without' scenario used by NECG as the basis for assessing the net public benefits of the proposed alliance is not credible. NECG assumes that, without the proposed alliance, Qantas and ANZ will compete aggressively for three to five years by increasing capacity on trans-Tasman and domestic New Zealand routes. This will result in both ANZ and Qantas incurring losses on selected routes, and ultimately, at

[1] NECG, 'Report on the Competitive Effects and Public Benefits Arising from the Proposed Alliance between Qantas and Air New Zealand', 8 December 2002.

some point after the five year modelling period, cause the demise of ANZ.

This scenario is problematic for two reasons. First it is only rational for Qantas to compete in this manner if it will cause a competitor to exit, and enable Qantas to recoup the losses incurred by earning high (monopoly) profits in the future. Secondly, if ANZ's demise is as foreseeable as NECG suggests, it is not rational for ANZ to compete and incur losses over a five year period. ANZ would be expected to cease operations immediately.

- The approach used to model the net public benefits of the proposed alliance is inappropriate and substantially underestimates the expected dead-weight losses. The modelling approach assumes that marginal costs (and prices) do not fall as a result of the significant excess capacity that emerges in the 'without' scenario. NECG's model predicts that, all else being equal, prices will rise when Qantas and ANZ undertake their capacity war because it results in an increase in demand at any given price. The capacity war is said to increase demand because of a very-crude uniform application of a capacity elasticity of demand. In practice, a capacity war such as that described in the 'without' scenario would be expected to result in substantial decreases in airfares. NECG's estimate of dead-weight losses arising from the proposed alliance ignores this.

- The results presented for the 'with' scenario, and the magnitude of the detriments derived, are highly questionable even when one adopts the assumptions NECG states are used in their model.

- The sources and estimated quantity of public benefits that NECG suggests will arise from the proposed alliance are highly questionable and should be significantly discounted, if not disregarded, in considering the effects of the proposed alliance. For example:

    - The $1,086 million[2] in estimated 'cost savings' appears to consist of the costs ANZ and Qantas expect to incur without the

[2] The figures quoted here are NECG estimates of public benefits. in net present value (NPV) terms, arising in the first five years after the alliance. These estimates are outlined in Table 1 of the NEGC Report (p 35).

proposed alliance that would be avoided because the proposed alliance would prevent the period of aggressive competition predicted in the 'without' scenario.

- NECG appears to give little or no value to the types of cost savings typically identified as sources of public benefits associated with mergers (e.g. cost savings arising from economies of scale). This in itself should be cause for concern to the NZCC and ACCC given that merger activity is generally driven by the desire to achieve efficiencies and synergies rather than to simply 'monopolise'.

- The $60 million of public benefits estimated to arise due to 'scheduling efficiencies' are based solely on reductions in customer waiting times compared with *current* schedules. If instead the 'without' scenario is used as the basis for comparison, the proposed alliance could even result in zero or negative scheduling efficiencies (i.e. scheduling inefficiencies).

- NECG's estimate of $1,134 million in 'tourism' benefits arising from the proposed alliance is considered highly improbable. No cogent argument is provided why Qantas Holidays does not already pursue the strategy the Report states it would pursue with the proposed alliance given the expected profitability. Any increase in tourism may be considered unlikely given NECG's view that the proposed alliance will lead to a decrease in competition and capacity and an increase in airfares.

- NECG estimates that the proposed alliance will create new direct services to a value of $116 million. The Report argues that these services will be viable under the alliance but not viable without the alliance because traffic could be aggregated under the alliance. The essence of competition is rivalry for customers. The Report does not explain why one airline (acting alone) could not offer a direct service and so capture sufficient passengers to make it viable.

- Approximately $15 million in net public benefit is expected to arise from the proposed alliance due to increased freight capacity. This result directly contradicts NECG's description of the effects of the proposed alliance on passenger services,

despite the fact that 85%-90% of freight is carried on passenger services.

In summary, the various approaches adopted in modelling the net public benefits of the proposed alliance substantially underestimate the costs of the proposed alliance and overstate any potential benefits.

2. The Proposed 'With' and 'Without' Scenarios

The competition authorities must consider the effects of the proposed alliance by considering the future with and without the proposed alliance. Consequently, the NECG Report seeks to assess the competitive effects of the proposed alliance by drawing a comparison with the market environment it considers most likely to exist if the proposed alliance does not proceed.

NECG reviews a number of possible scenarios that may emerge if the proposed alliance does not proceed. (pp 98-103) NECG dismisses as likely outcomes scenarios in which 1) Qantas and ANZ set fares and schedules to maximise joint profits (termed the 'cosy –duopoly' scenario) or 2) ANZ enters into an alternative alliance. A third option in which Qantas expands operations and ANZ reduces capacity on certain loss making routes has been outlined in confidential Appendix F, but this is regarded as unlikely by NECG on the grounds that it would not be a profit maximising strategy for ANZ.

The principal features of the 'with' and 'without' scenarios NECG adopts as the basis for its modelling of the competitive effects of the proposed alliance can be summarised briefly in five propositions:

- If the proposed alliance proceeds, Qantas and ANZ will cease to compete on trans-Tasman and New Zealand domestic routes and will co-ordinate scheduling and fares, amongst other things. ANZ and Qantas have provided NECG with their proposed schedule for the next five years if the proposed alliance proceeds, and this forms the basis of the modelling of the with scenario.[3]

- If the proposed alliance does not proceed, Qantas will compete aggressively with ANZ for the next three to five years by substantially increasing capacity on trans-Tasman and New Zealand domestic routes. Both airlines will incur losses on selected routes over the five year modelling period as a result of this capacity war. ANZ will continue operations during the five year modelling period, but

[3] The ANZ and Qantas schedules with the proposed alliance are outlined in Table 7 (p 96) of the NECG Report.

competition from Qantas on these routes may lead to the demise of ANZ at some time in the future.

- With or without the proposed alliance, a value-based airline (VBA), such as Virgin Blue, will commence operations on trans-Tasman and New Zealand domestic routes in the next two years. The proposed alliance will, however, affect the timing and scale of entry by the VBA.

- The VBA that enters will compete effectively on trans-Tasman and New Zealand domestic routes, and be a viable operator in the long term either with or without the proposed alliance. A central component of NECG's argument is that VBAs serve distinct market segments from full service airlines (FSAs) such as Qantas, and historically, ANZ. This is key to NECG's proposition that *(without the Alliance)* ANZ will cease to operate because of direct competition from Qantas, while the VBA can operate viably in the relevant markets.

- It is assumed that with or without the proposed alliance all airlines currently operating on trans-Tasman routes continue to operate and expand operations as the market grows.[4]

We consider that several key features of the 'with' and 'without' scenarios are very questionable. Our principal concerns with the proposed scenarios are discussed below.

2.1. Aggressive capacity competition between Qantas and ANZ

NECG's characterisation of the form of competition between Qantas and ANZ that will occur without the proposed alliance is summarised in the paragraph below:

> 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.

[4] Expected schedules of existing carrier over the five year modelling period are outlined in Table 8 (p 97) of the NECG Report.

> Additionally, and most 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. (p 103)

NECG assumes that Qantas will win this capacity war, and ANZ is likely to be forced to reduce or cease operations in the future. NECG considers that, although 'aggressive competition is costly and would require the airlines to sustain losses on some routes' (p 99), Qantas could sustain the costs it involves, whereas ANZ could not given the limitations on funding available from the New Zealand Government. (p 20)

NECG characterises the choice for ANZ as being between the proposed alliance and a slow, painful death. The 'without' scenario is the slow, painful death. The decline is modelled but not the death because the time horizon adopted by NECG is limited to the next five years.

The strategy NECG argues Qantas and ANZ will adopt in the 'without' scenario is problematic for a number of reasons.

First for some decades, two FSA airlines have provided the majority of services on trans-Tasman and New Zealand domestic routes. Other airlines have also commenced services from time to time. The NECG Report fails to establish that the environment in the relevant markets has changed, to such an extent and in ways that are sufficiently long-lasting, so that this can no longer be the case. Nonetheless the argument rests on the proposition that the world has changed so that only one FSA and a VBA will survive. This depends in turn on the sharp distinction between FSAs and VBAs that is drawn by NECG. This is discussed further in section 2.3 of this report.

Secondly, it is improbable that Qantas or ANZ would adopt the strategies that the NECG Report predicts these airlines would pursue in the 'without' scenario.

The behaviour described for Qantas in the 'without' scenario could be regarded as inconsistent with a rational, profit maximising response unless it is designed to cause competitors to exit the market or to deter entry. This is the essence of the ACCC's argument in the Statement of Claim lodged in

relation to Qantas's response to entry by Virgin Blue on the Brisbane–Adelaide return route. In that case, the ACCC argued that:[5]

> By reason of the above matters it would not have been rational or profit maximising for Qantas to add substantial capacity between Adelaide and Brisbane while matching the prices of a low cost airline except to eliminate or substantially damage a competitor or prevent a competitor from engaging in competitive conduct or to prevent the entry of a competitor into another market or markets.

In addition, as the economic literature on predation points out, it would be rational for Qantas to adopt such a strategy and to incur losses only if there were to be some pay-off in terms of fancy profits in the future. This would require that there are significant barriers to entry into these markets. This is probably correct as a matter of fact. However, as a matter of logic, one cannot predict a 'without' scenario that is contingent upon there being substantial barriers to entry and, at the same time, argue that the markets are characterised by easy entry.

The supposed strategy of ANZ in the 'without' scenario is also questionable. NECG's 'without' scenario assumes ANZ commits to a strategy that results in it incurring substantial losses for a number of years despite the probability that it will be forced to reduce or cease operations. If the decline of ANZ is as foreseeable as NECG suggests, it is highly improbable that ANZ or its principal shareholders would incur these losses before winding down operations. It pre-supposes that the Government of New Zealand would be prepared to fund a war to the death with Qantas that ANZ cannot win. So, although the strategy predicted by the Report for its 'without' scenario might be rational for Qantas, the response to that strategy that is predicted for ANZ would not be rational.

2.2. Entry by a VBA

The other key player in NECG's future 'with' and 'without' scenarios is Virgin Blue. NECG argues that Virgin Blue (or another VBA) is likely to enter the trans-Tasman and the New Zealand domestic passenger markets in the

[5] ACCC, *Statement of Claim* 7 May 2002, , p 23

next three to five years whether or not the proposed alliance proceeds. However, if the proposed alliance proceeds, NECG states that the VBA will commence operations:

- With a greater number of services. With the proposed alliance, the VBA is assumed to operate 350 services per week within three years, of which 126 are trans-Tasman services and 224 are domestic services. Without the proposed alliance, the VBA is assumed to operate 68 services per week within three years, all of which are trans-Tasman routes; and

- On more city-pair routes than without the proposed alliance. If the proposed alliance proceeds, the VBA is assumed to operate on 12 city-pair routes within three years. Without the proposed alliance the VBA is assumed to operate services on 6 city-pair routes.[6]

Entry by a VBA such as Virgin is important to NECG's analysis of the 'with' scenario for two principal reasons:

- It will limit the increase in price and decrease in quantity that the Cournot model would otherwise predict to occur as a result of the proposed alliance; and

- It will limit the likelihood of a reduction in productive or dynamic efficiency that may otherwise result from the proposed alliance.

There is little or no justification given in the NECG Report for the assumed scale of entry by a VBA either with or without the proposed alliance. If the scale of entry by a VBA is less than is assumed by NECG, the competitive detriments of the proposed alliance may be considerably greater.

The NECG Report states (Table 6 and pp 89-90) that it estimates that entry by the VBA will be profitable with or without the alliance. This may well be true. However, as a matter of logic, it is surprising that VBA entry is viable during the capacity war that is predicted by NECG in the absence of the proposed alliance. The surprising prediction may well result from NECG's modelling

[6] The number of number of services assumed to be operated by a VBA in year three of the modelling period is taken from Table 5 (p 89) of the NECG Report.

approach that assumes that the incumbents' marginal costs (and prices) do not fall as a result of the aggressive increase in capacity (see section 4 of this report for a full discussion).

2.3. A new VBA will operate viably but ANZ will not.

A critical element of NECG's competition analysis is the proposition that the strategies of a FSA are quite distinct from the strategies of a VBA. This argument is key to NECG's proposition that ANZ may cease to operate because of competition from Qantas, while a VBA will viably enter the trans-Tasman and New Zealand domestic markets. As discussed below, we consider that in practice the distinction between VBAs and FSAs is not as clear as NECG suggests, creating a further reason to treat the 'with' and 'without' scenarios with scepticism.

The NECG Report proposes that FSAs (such as Qantas and, historically, ANZ) operate a network service based on inter-connectivity across a range of routes and seek 'to provide the full range of service traditionally associated with passenger air travel.' (p 7)

NECG states that, by contrast, VBAs 'do not seek to provide full network interconnectivity; this allows them to avoid the complexities and high costs that interconnectivity imposes in terms of ticketing, revenue management, scheduling and flight operations. The result is that they provide a very focussed form of competition that is able to offer low fares to travellers with essentially point-to-point travel needs.' (p 10)

This distinction is drawn very sharply in parts of the by NECG Report and is critical to its characterisation of the 'with' and 'without' scenarios and the analysis of net public benefits arising from the proposed alliance. However, at the same time, NECG characterises the domestic strategy of ANZ as VBA+, suggesting that airlines position themselves on a price-service continuum, and not only as a VBA or FSA. NECG classifies ANZ's domestic strategy as VBA+ because it continues to provide the same type of 'full network connectivity' that it did in the past but does not provide the 'full range of services traditionally associated with passenger air travel', and so it does not qualify as a genuine FSA.

As Joan Robinson noted some seventy years ago, markets may be separated by a 'gap in the chain of substitutes'. Although the NECG Report argues to

the contrary at many points, there is no obvious gap in the chain of substitutes between a FSA and a VBA. Rather, these represent extremes in the continuum of strategies from which a particular operator may choose. Other operators may adopt intermediate positioning (such as VBA+). Still others may elect to operate in both modes at once. Indeed, this appears to be the intention of the merged Qantas/ANZ.

Despite the VBA/FSA distinction being obviously one of degree, the NECG Report at times insists that the choice is all or nothing. It insists on this all-or-nothing characterisation because it wishes to argue that ANZ has no future:

> 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. (p 15, emphasis added)

The NECG Report fails to establish a robust argument why ANZ will incur losses that may lead it to exit the market, but at the same time a VBA will enter and be a viable competitor in the long term. NECG notes the 'experience internationally highlights the difficulties full service operators have in converting themselves to the VBA model, and hence the vulnerability of even the newly-adopted ANZ model to displacement by a value-based alternative.' (pp 10-11) However, the NECG Report also notes that the recent move by ANZ into VBA+ is 'considered promising' (p 15) and the alliance will straddle both modes (p 17).

In effect, NECG seems to want to argue two inconsistent positions. When it discusses the 'without' scenario, the Report seems to argue that the FSA/VBA distinction is quite sharp and Qantas will compete much more closely with ANZ than with the VBA. However, when it discusses the 'with' scenario, the differentiation between the products of Qantas and that of the VBA is assumed to be much less marked. In the 'with' scenario NECG argues that the VBA will offer strong competition for the merged Qantas/ANZ.

Nevertheless, it follows from NECG's logic that the new entrant VBA (because it differentiates its product from Qantas) will offer a softer form of

competition for Qantas than does ANZ. This is the only way that the NECG Report can explain the behaviour of Qantas in wishing to proceed with the proposed alliance. If the VBA were likely to compete head-on with Qantas (in the manner of ANZ) then Qantas would have little to gain from the alliance: it would merely substitute one competitor for an identical competitor. So the logic of the NECG Report compels us to conclude that the reason Qantas is keen on the alliance is that it will get rid of a direct competitor and replace it with an indirect competitor.

3. The Relevant Markets

This section considers the relevant market for the purpose of determining the net benefits or costs of the proposed alliance.

The NECG Report does not have a concluded position on market definition, although it inclines towards a single market for air passenger 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. (p 64)

In addition to the VBA/FSA distinction suggested by NECG that is discussed in section 2.3, the NECG Report raises two issues to do with market definition that should be dealt with. The first is the geographical boundaries to the markets. We consider that it is more helpful to the analysis of this proposal to adopt the three-fold division of markets that the NECG proposes as an alternative. In our opinion, it is appropriate to analyse effects on competition in:

- the domestic New Zealand market
- the Australian domestic market, and
- the trans-Tasman market.

Secondly, NECG raises the issue of separate markets for passenger services and freight services. Although NECG claims to follow earlier decisions of the ACCC and the NZCC in analysing these services in separate markets, in the case of this merger, we believe it is more appropriate to analyse the effect on competition in a market for air transport services that embraces both passenger and freight services.

Before we address these two issues, it may be useful to set out some of the principles that guide our consideration of appropriate market definitions. In particular, the issues of geographical boundaries and the separation of passenger and freight services involve issues of what are generally known as

cluster markets. That is, passenger services offered on different routes are not included in the same market because they are regarded as close substitutes for each other. Rather, they may be included in the same market because complementarities in demand or production mean that firms will only be able to compete by producing both types of services. Similarly, it may be appropriate to define a market that embraces both passenger and freight services, not because these are close substitutes in demand, but, rather, because they are complements in production such that a firm will best be able to compete by offering both types of services rather than by specialising in one to the exclusion of the other.

Henry Ergas has this to say:

> A cluster market arises when the economies of scope are such as to require firms to compete not on individual items but rather on a set of items taken jointly. These economies may operate at a range of levels: in production, with joint production (say, of wool and lamb) being an extreme case; in distribution, as in the optimal assortment of goods sold in retail stores; and in consumption, as in the likelihood of consumers purchasing razors and blades from the same supplier. Examples of clusters (which are merely provided as illustrations and may be controversial in specific instances) include aggregates such as 'in-patient services', which reflects the economies of scope hospitals can derive from providing a full set of the relevant medical equipment, staff and services; 'transactions banking services', which groups together the range of functions for which a branch network is required; and 'grocery stores', which will generally have a core assortment of frequently-purchased 'convenience' goods.
>
> Thus, to say that good A and good B form a cluster is to imply that a firm selling only A or only B would not be able to compete with one selling both A and B – either because the supply cost of producing A and B jointly is substantially below that of producing them separately, and/or because consumers incur additional costs when they purchase A and/or B separately as against purchasing them jointly. This, in turn, implies that a cartel which – out of an initially competitive market – grouped all firms which jointly produced A and B, but excluded those which produced only A or B, could profitably increase the joint price of A and B, and hold that price above the competitive level for so long as entry into full-line supply did not occur. It is consequently the cluster of A and B which meets the 'ideal collusive group' test that underpins modern approaches to market definition.[7]

[7] Henry Ergas, 'Cluster Markets: What they are and How to test for them', Working Paper, The Centre for Research in Network Economics and Communications, School of Business and Economics, The University of Auckland, p 3.

Before one examines substitutability in demand or supply, one must be sure one can answer the question: substitutable for what? In some cases, the answer to this question may be a single product, in other cases, the answer may be a cluster of goods or services.

3.1. Geographical boundaries

The key issue in determining the geographical boundaries to markets for air services is that of complementarities in demand and/or supply that were referred to above in our discussion of cluster markets. Complementarities in demand may arise as a result of providing the benefits of interconnectivity to passengers or to freight. Complementarities in production may arise, for example, as a result of using an aircraft to fly from A to B as well as the return journey from B to A. No one would argue that a passenger journey from A to B is a close substitute for a passenger journey from B to A. Nevertheless, these services would normally be defined as being in the same market, because the cost to an airline of offering both services is half that of offering the two services by two separate airlines with planes flying empty on the return leg.

Interconnectivity is discussed in section 2.3.3 of the NECG Report. In that section, interconnectivity is said to have both advantages and disadvantages. Interconnectivity and interlining is said to be a characteristic of FSAs but not of VBAs. Currently, Virgin Blue has limited international interlining. However, if Virgin Blue were to expand its operations to include both domestic services within New Zealand and services across the Tasman, it would be able to gain advantages from interlining.

Although interlining across national boundaries may be one source of competitive advantage, the history of competition in aviation in Australia, New Zealand and across the Tasman suggests that these advantages are not so overwhelming as to require the definition of an Australasian market. Airlines, including Qantas, ANZ and Virgin Blue have survived for long periods of time by specialising in parts of the region. It is not clear why they could not continue to survive by being geographical specialists in the future.

It is noteworthy that the NECG Report, although preferring a market that embraces all three regions, undertakes its competition analysis on a disaggregated basis. This choice seems to be dictated by the problem at hand; and this provides another compelling reason to opt for three separate regions when analysing the effects of the proposed alliance on competition. It seems

almost obvious that the effects of the merger will be felt within domestic New Zealand travel and within Trans-Tasman travel. As the NECG Report states: '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.' (p 66)

3.2. Separate passenger/freight markets?

The NECG Report states that they 'proceed on the basis that air freight services are provided in a distinct market (p 63; Appendix A, p 181) This is said to be conservative, and narrowed for the sake of simplicity, because in their view '…air freight services are likely to be included in a market for time critical freight. (p 63; Appendix A, p 181)

We believe that this overemphasises demand substitution over production complementarities, and it misrepresents commercial reality in ignoring the strategy and operations of airlines and the way in which they compete. In our opinion a more appropriate delineation of the sphere of competition relevant to the alliance would not treat the provision of air passenger and air freight services as separate and distinct markets, but as integral parts of a broader airline services market. Having said that, it should be noted at the outset that the inconsistency in NECG's analysis of passengers and freight is anomalous, even if one does not accept the broader delineation of the relevant market.

As is the case whenever multi-product firms are involved, the appropriate market definition for analysing competition should not focus narrowly on one product or service when there are clear interdependencies and synergies in the production of, and competition in the provision of, the cluster of products or services.

The Mason approach to definition of markets illustrates this point, as he explained:

> … the market, and market structure, must be defined with reference to the position of a single seller or buyer. The structure of a seller's market, then, includes all those considerations which he takes into account in determining his business policies and

> practices. His market includes all buyers and sellers, of whatever product, whose action he considers to influence his volume of sales.[8]

The Mason approach would be to start with the strategy of the alliance participants itself. One could then investigate the range of its activities and then ask whether all these activities are linked by substantial synergies or whether some sub-group of them is sufficiently independent to be considered as a viable group of products for a new business to contemplate.

It may be argued that the mere existence of dedicated air freight carriers may be evidence that such synergies between the carriage of passengers and freight may not be important and therefore may provide constraints to behaviour. However, dedicated freighters only play a small role in the provision of air freight services:

> …there are a number of carriers operating dedicated services but these account only for about 10 percent of the total air freight market.[9]

This point is emphasised in the NECG Report, and is reinforced with figures from the Bureau of Transport and Regional Economics. (p 63, fn 82; p 181, fn 202) The low share of air freight by dedicated players may actually be evidence that synergies between freight and passengers are important, especially in the relevant region. We also understand that dedicated freighters only run in a very limited number of routes considered relevant for the proposed alliance. The reason for this seems to be that very few routes within Australasia have sufficient demand to support a specialised air freight carrier.

The synergy inherent in the production of passenger and freight services also manifests itself in the cost and revenue structure of airlines, and the choices they make – including use of available capacity and pricing – as past determinations have also highlighted:

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[8] Edward S. Mason, 'Price and Production Policies of Large-Scale Enterprise' American Economics Review, Supplement Vol. 29, No.1, (1939)

[9] ACCC, 1998, Ansett Australia Limited and Others, S88(1) Application For Exclusionary Provisions For Alliance Agreement, 22 June. Authorisation No: A90649/655, File No: CA 98/4. Quoted from: Air Alliance (1998) Australian Trade Practices Reporter (Com) ¶50-265 , p 55, 397. (Hereafter, 'Determination A90649/655')

> The level of competition within the air freight market is relatively high. With passenger revenue covering the bulk of the costs of operating services airlines often marginally price freight capacity, operational limitations permitting. However, this practice also means that when passenger loads are high freight is the first item to be off loaded.[10]

ACCC & NZCC determinations

It may be argued that combined air services markets represent a divergence from the approaches adopted in previous ACCC determinations: A30202 (2000, regarding Qantas and BA);[11] which relied heavily on the market definitions adopted in A90649/655 (1998, regarding Ansett Australia, Ansett International, Air New Zealand and Singapore Airlines);[12] which in turn mirrored A90565 (1995, regarding Qantas and British Airways).[13]

However, an integrated approach is not in stark opposition to these past determinations, because the proposition we raise here – that the provision of air passenger and air freight services should be treated within one market – was never really examined. The starting point in these determinations was that there were separate passenger, freight, distribution and other markets (such as engineering and terminal services), which formed the basis for further delineation of the relevant markets and segments (by considering their various geographic, product, functional and temporal dimensions).

This is curious considering that a key feature of all these determinations was the argument that analysis of the effects on competition in the air freight

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[10] Ibid.

[11] 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 (Referred to as the 'RJSA determination' in the NECG Report. Hereafter 'Determination A30202').

[12] ACCC, 1998, Ansett Australia Limited and Others, S88(1) Application For Exclusionary Provisions For Alliance Agreement, 22 June. Authorisation No: A90649/655, File No: CA 98/4. See: Air Alliance (1998) Australian Trade Practices Reporter (Com) ¶50-265. ('Determination A90649/655').

[13] ACCC, 1995, Joint Services Agreement between Qantas Airways Limited and British Airways Plc, 12 May. Authorisation No: A90565. (Hereafter, 'Determination A90565').

market could be read from analysis of the effects on competition in the passenger market.[14] The rationale for this in all cases was the proposition that an air freight service was a 'by-product' of the air passenger market, and that most air freight cargo was carried in the bellyholds of passenger aircraft.[15] Relying on this correlation, the ACCC have used competition analysis of the air passenger market effectively as a proxy for competition analysis for air freight market. For example in the 2000 determination (A30202, p 62) the ACCC said:

> In Determinations A90649/90655 the Commission noted that the majority of air freight to and from Australia is carried on passenger flights and as such the level of competition within air freight market is dependent upon many of the same factors as within the passenger market.

One would imagine that this close relation drawn between the two 'markets' would prompt the possibility of considering one relevant market encompassing the two products, or at least a greater recognition of the competitive sphere in which airlines generally do not compete only in passengers, or only in freight.

The markets that the NZCC chose to consider in the 'Bodas Determination',[16] may have suggested such an idea. Although ANZ in that case contended that domestic air freight services is one of the five relevant markets, separate from domestic passenger market, the NZCC chose in the end, not to deal with this separately from the domestic passenger market:

> There are no substitutes for same day air freight services available except electronic transmission in the case of some documents. However, as same day air freight is a by-product of passenger air services, any issues that arise in this instance, as a result of the acquisition, would be reflected in consideration of the main trunk passenger air

[14] Determination A90649/655, above, at p 55,396-7.

[15] Determination A30202, above at, p 63; Determination A90649/655, above at p 55,397. Also: New Zealand Commerce Commission, Decision No. 278, 3 April 1996 (Referred as the 'Bodas determination' in the NECG Report) para 150, p 60.

[16] New Zealand Commerce Commission, Decision No. 278, 3 April 1996. (Referred as the 'Bodas determination in the NECG Report.)

> services market. Therefore, separate consideration of the domestic air freight services market is not required.[17]

Strategy and the relevant field of rivalry for airlines

For the purpose of considering the impact of the proposed alliance on competition, it should be recognised that the business of the players is in transporting both passengers and freight.

Firms in making their investment and other decisions will consider revenue from both parts of their business. For example, when an airline decides to increase capacity (e.g. purchase new aircraft) it will compare the capital and operating costs of the extra aircraft with the extra revenue that will be got – whether that revenue comes from passenger services or from freight services.

Airlines compete on how well they can utilise their assets – most importantly, but not exclusively, their fleet of aircraft. This involves juggling their two products of passenger and freight carriage, because passenger services and freight services are not produced in fixed proportions. At least in the long run, airlines can alter the ratio of passenger services and freight services by, for example, their choices of aircraft, and scheduling. The discussion of 'Improved freight operations' outlined in p 161 of the NECG Report is illustrative of the types of things airlines can do (e.g. replacing wide body planes with narrow bodies planes, scheduling 'back of the clock' flying).

A more appropriate delineation of the market for analysing the effects of the proposed alliance would encompass air passenger and air freight transport jointly. However, even if the Commission chooses to adopt separate air passenger and air freight market definitions, it is important that it recognises the close linkages between the two types of service. Recognising this linkage enables one to analyse the key drivers behind the operational strategy of the airlines such as those in the proposed alliance, and effects of the proposed alliance on actual and potential competitors.

In summary, the most-appropriate markets in which to analyse the effects on competition of the proposed alliance are:

[17] Bodas determination, p 60.

- A domestic New Zealand air services market;
- A domestic Australian air services market; and
- A trans-Tasman air services market.

4. The Modelling of Detriment Caused by the Lessening of Competition

Pages 104 to 118 of the NECG Report model the effects of the proposed alliance on prices and quantities of passenger services. Much of this modelling is distinctly idiosyncratic and some of it is based on assumptions that are inconsistent with other parts of the Report.

The modelling consists of three principal elements: a standard Cournotesque effect; a change in marginal costs; and the effects of changes in capacity. The results that are presented in Tables 10 and 12 are the consequence of these three effects. These are further transposed into NECG's estimation of the deadweight losses that would result from the proposed alliance.

4.1. The standard Cournot model

The Cournot model is one of the standard building blocks of the theory of industrial organisation. The Cournot model represents a particular type of competition. In particular, it depicts firms competing in their decisions as to the amount of output that they place on the market in any one period. The natural way to think of the Cournot competition that is used in the NECG Report is as competition among firms producing a homogeneous commodity which is placed on the market; and a price emerges that clears the market. The international market for crude oil might approximate the assumptions of the Cournot model.

There is an extensive literature on when the Cournot model may or may not be applicable. Tirole's *Theory of Industrial Organization,* Chapter 5, provides an accessible summary of this literature. One conclusion of this literature is that the Cournot choices of quantity might well be used to depict the way in which firms determine their capacities.

Any assessment of the modelling in the NECG Report must form a judgement as to the applicability of their version of the Cournot model. As is explained in this section of our assessment of the NECG Report, NECG does not use the Cournot model to predict capacity decisions. Rather, the Report takes given assumptions about the capacity of each airline on each route in each scenario. These assumptions are based on information that was provided by Qantas and ANZ. (see p 110) The modelling then assumes that market shares are

determined in accordance with capacity. So market shares for calculation of the Cournot model are merely those that are assumed as a result of information provided by Qantas and ANZ.

The NECG Report uses Cournot only to determine aggregate prices and quantities for routes where market shares are given. This is a particularly inappropriate application of the Cournot model. Markets for air services are characterised by product differentiation across routes and across types of carrier. Once an airline has decided how to position its product and which routes it will fly, airlines then engage in Bertrand-type competition. Standard tools of economics enable competition of this kind to be modelled.[18]

Having said that, we attempt here to illustrate below how each key element driving the model – Cournot competition, marginal costs and capacity – is expected to affect the price and output results that are presented in Tables 10 and 12 of the NECG Report. Each effect will be addressed in isolation to guide our interpretation and critique of the results of the modelling. A more technical explanation of the effects summarised here is provided in Appendix 1 of this report.

4.2. Effects of Cournot competition

Without any changes to capacity or marginal costs between the 'with' and 'without' scenarios, the Cournot model would show that:

- the output with the proposed alliance will be lower than the equilibrium output in the 'without' scenario; and

- the price with the proposed alliance would be higher than the equilibrium price in the 'without' scenario

on those routes on which Qantas and ANZ fly in the 'without' scenario. These price and quantity effects reflect a lowering of competition, or an increase in concentration in the market. (See Appendix 1, A1.1. of this report)

[18] A good survey is provided in John Beath and Yannis Katsoulacos, *The economic theory of product differentiation*, Cambridge University Press, 1991. A useful example of modelling along these lines is Dionisia Tzavara, Paul Levine and Neil Rickman, 'Market entry and roll-out with product differentiation', 2002 working paper, http://repec.org/res2002/Tzavara.pdf

4.3. Effects of changes in marginal costs

Marginal costs are critical for the prices and quantities that are predicted by the Cournot model. In isolation, the effect of a change in industry wide marginal costs would be to alter the maximum size of the market in which Cournot competition would then determine the level of output by the market participants. Market participants' shares of output are determined by reference to their marginal costs. The NECG model treats marginal costs somewhat oddly. Although they are allowed to vary across firms, these variations have no effect on the outputs of the individual firms.

To illustrate the effects of changes in marginal costs in the standard Cournot model, assume that marginal costs do not vary across firms. A fall in marginal costs would unambiguously reduce prices and increase output. An increase in marginal costs would have the opposite effects. (See Appendix 1, A1.2. of this report) In comparing the 'with' and 'without' scenarios, a rise in marginal costs will only exacerbate the increase in price and the reduction in output as a result of the alliance. Whether a fall in the marginal costs with the proposed alliance will generate a lower price and higher output than without the proposed alliance depends on the magnitude of the change in marginal costs compared with the magnitude of the Cournot effect.

The NECG modelling estimates marginal costs for each operator on each route under current conditions. These same marginal costs are assumed to hold in the 'without' scenario. The marginal costs that are assumed for the 'with' scenario seem not to be greatly different from those of the current base case. As the NECG Report explains: 'The marginal cost of the merged firm is calculated as a weighted average of the marginal costs of the participants to the proposed alliance, with the weights based on pre-alliance market shares.' (p 107 fn 139)

In order to understand the NECG modelling, it is important to appreciate that the assumptions about marginal costs imply that the increase in capacity in the 'without' scenario does not significantly affect the marginal costs in the market as a whole. The only way in which the increase in capacity in the 'without' scenario is allowed to affect the marginal costs in the market is by its effect on the weights that are attached to the marginal costs of the various participants in the market. Combined with the averaging process, under the conditions imposed due to NECG's approach to the modelling, the effects of changes in marginal costs would be expected to be relatively small.

The NECG modelling of prices and outputs of passenger services assumes that the new entrant VBA's costs (one can only guess these refer to marginal costs) are 'assumed to be 20% below the costs of a FSA'. (p 111) Under the NECG model these low marginal costs have no effect on the relative outputs of the VBA and the merged entity. In addition, both the 'with' and the 'without' scenarios involve ANZ moving toward a VBA+ model in domestic New Zealand and hence on these city- pairs ANZ's costs are reduced by 7.5%. (p 111). This is not credible.

4.4. Effects of changes in capacity

According to NECG, the future with the proposed alliance will see reductions to capacity relative to the future without the alliance. In modelling the effect of changes in capacity in the future with the alliance, NECG adopted assumptions provided by Qantas and ANZ. These indicate that the 'without' scenario has substantial excess capacity compared with the 'with' scenario. (p 137) Nevertheless, because of the way marginal costs are estimated, in the model this excess capacity is not allowed to influence marginal costs.

This is a remarkably odd feature of the modelling. One would normally think that, if an aeroplane is full, the opportunity cost of filling the last seat is the revenue that is forgone by not offering that seat to the next most-urgent (or valuable) potential passenger. Alternatively, if the plane has massive excess capacity, the opportunity cost of filling an extra seat is close to zero. This is not the case in the NECG modelling. In their modelling, marginal cost does not change as a result of substantial excess capacity.

According to the modelling of NECG, the only effect of the extra capacity that will be introduced in their 'without' scenario is to increase demand for travelling on the relevant route. As the Report explains:

> 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.
> (p 111)

NECG expresses the magnitude of the effect of the change in capacity on the demand curve is measured by the capacity elasticity of demand. (p 111, para 1; and 114, para 3) Although the estimate of the capacity elasticity of demand is sourced from another study, the uniform application of this elasticity to all increases in capacity seems very crude. An increase in capacity will produce

an increase in demand if that increase in capacity offers potential passengers something of value. If an extra flight is added at exactly the same time as an existing flight, it is hard to see how any extra value is created. If the extra flight is scheduled very close to the existing flight, not much extra value will be created. In summary, any shift in the demand curve will be critically dependant on both the amount of extra capacity and on the timing of the flights that extra capacity services.

The use of the Cournot model to determine prices, when combined with the precept that increases in capacity will increase demand but have no effect on marginal costs produces a result that is quite counter-intuitive. The result is that the significant excess capacity in the 'without' scenario compared with the 'with' scenario (p 137) does not depress prices under the NECG modelling. Rather, it raises prices, because it moves the demand curve out to the right. NECG's modelling approach results in the decrease in capacity in the 'with' scenario causing prices to fall because demand is assumed to fall as capacity decreases. (See Appendix 1, A1.3. of this report)

This gives rise to an important caveat that should be borne in mind when interpreting the NECG price and quantity predictions. The predictions for the prices and quantities of passenger services compare (as is appropriate) the future prices and quantities on the various routes with and without the proposed alliance. So the price increases that are predicted by the NECG Report are price increases compared with the 'without' scenario. The caveat is that the 'without' prices are almost certainly higher than is currently the (base) case. The reason for this is that the principal difference between the base case and the 'without' scenario is the substantial increase in capacity. Under the NECG modelling, the effect of this increase in capacity is to increase demand and prices compared with the base case.

4.5. Model results in Table 10 and Table 12

The results of the modelling as presented in Tables 10 and 12 are difficult to explain because they arise from the combined effect of Cournot pricing, possible changes in marginal costs and shifts in the demand curve caused by exogenous changes in capacity as the 'without' scenario changes to the 'with' scenario. No information is provided to the reader about the magnitude of each effect.

Results from the NECG modelling showed that on most routes (15 out of 43) the impact of the alliance would be positive on price and negative on output (ie higher prices and lower output in the 'with' scenario than in the 'without' scenario).[19] This would be consistent with the effect of an increase in the concentration of the market under Cournot, as illustrated in 4.2., or where this effect dominates.

There are also:

(i) 13 routes with zero impact on both prices and output;[20]

(ii) 6 routes with zero price impact, but negative output impact;[21]

(iii) 6 routes with zero price impact, but positive output impact;[22]

(iv) 2 routes with negative price impact, but positive output impact;[23]

(v) 1 route with both positive price and output impacts.[24]

The most peculiar results are those for the routes in which the model produced more output with the alliance than without (iii, iv and v). One way in which output may increase in this model, and offset any Cournot effect, is through an increase in demand by expanding capacity. However, such an

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[19] Routes: AKL-SYD, AKL-MEL, AKL-BNE, WLG-SYD, WLG-BNE, CHC-SYD, CHC-MEL, CHC-BNE, AKL-NAN, NAN-LAX, AKL-LAX, AKL-WLG, AKL-CHC, CHC-ZQN, AKL-ZQN.

[20] Routes: TBU-APW, APW-LAX, RAR-LAX, NAN-RAR, RAR-PPT, AKL-HNL, LAX-LHR, AKL-TPE, AKL-NRT, AKL-KIX, AKL-DUD, WLG-DUD.

[21] Routes: AKL-CNS, AKL-NLK, AKL-NOU, AKL-RAR, AKL-SIN, SYD-LAX.

[22] Routes: AKL-PER, AKL-APW, AKL-PPT, PPT-LAX, AKL-HKG, AKL-NGO.

[23] Routes: WLG-MEL, CHC-WLG.

[24] Route: SYD-ZQN.

increase in demand will tend to supplement the Cournotesque increase in price. Therefore, while a capacity increase may help explain (v), it does not explain (iii) and even less (iv). The combination of price and quantity impacts in (iii) and (iv) in this model requires a reduction in marginal costs of a sufficient magnitude to offset the Cournot effects, and the effects of any changes in demand (either the fall in output in the case of reduced demand, or the rise in prices as a result of increased demand). However, NECG's assumptions regarding marginal costs (described in 4.3. above) severely constrain the possibility of significant differences in marginal costs between the two scenarios. This leads us to conclude that the NECG findings in cases (iii) and (iv) are extremely difficult to understand or justify, even under the assumptions that NECG have adopted.

4.6. The dead-weight loss

The calculation of dead-weight loss is explained on pages 115 to 118. The reader is given no detail at all, so it is impossible to work out how the net calculation is made. The picture in Figure 1 on page 116 is standard. However, the calculations seem not to be consistent with the Figure. The most-obvious reason for this is that the 'with' and 'without' comparisons involve a combination of effects that tend to increase prices (because of the increase in monopoly power) and effects that tend to decrease prices (because of the reduction in capacity that tends to shift the demand curve in towards the origin).

It is not clear how the dead-weight loss calculations cope with the shift in the demand curves, the shifts in marginal costs or with the combination of decreases in prices and the increases in output that occur for some routes. The logically-consistent approach would have been to estimate the difference in consumer surplus as a result of the combination of all of these effects; but it is not clear that this has been done.

Furthermore, in the NECG model average fares with and without the proposed alliance are determined using current average passenger revenue on a sector, adjusted for: a 20% reduction in ANZ fares resulting from fares available through NZ Express (p 110); an assumed cost differential between a VBA and a FSA to determine the price that would prevail in the 'with' and 'without' scenarios as a consequence of VBA entry; and the increase in price that results from the reduction in competition and number of competitors (p 112).

As discussed above, the assumption embodied in NECG's modelling is that marginal cost does not change as a result of the increase in capacity (and the under-utilisation of that capacity) in the 'without' scenario. This will result in the modelling significantly underestimating dead-weight losses relative to the more usual assumption that marginal costs, and prices, fall when there is substantial excess capacity.

4.7. Effects on quantity and price of freight

The NECG Report suffers from its attempt to analyse competition in passenger services independently of competition in air-freight services. As we noted in section 3.2. above, Appendix A of the NECG Report argues that freight and passenger services should be separately analysed. However, it proceeds to argue that this will not create any problems, because their analysis of passenger markets can be extrapolated to freight markets:

> 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 markets. (p 181)

This conclusion is completely ignored in the modelling in the Report. The Report proceeds on the basis that the analysis of the effects of the proposed alliance on price and quantity of passenger services need bear no relation at all to the analysis of the effects of the proposed alliance on the price and quantity of freight services.

This asymmetry of treatment is quite inappropriate because, as we argued in section 3.2, the effects of the proposed alliance on the prices and quantities of freight are likely to be similar in type to the effects of the proposed alliance on the prices and quantities of passenger services.

The first big difference between NECG's predictions about freight and passenger services derives from their predictions about the effects of the proposed alliance on capacity. Whereas they predict that the proposed alliance will reduce capacity on passenger services (compared with the 'without' scenario), NECG predicts that the proposed alliance will increase capacity for freight by 5.3% by year 3. (p 161)

Three reasons are given for this increase in capacity:

- 'Back of the clock' flying of B767 aircraft that are currently overnighting in Melbourne;
- Possible options to expand specialised freight services into Asia; and
- The introduction of Qantas B744ER equipment from USA to New Zealand and Australia.

This reasoning raises two obvious questions. In the first place, it is not clear why these increases in capacity are contingent upon the alliance. For example, it is not apparent from the NECG Report why Qantas, in the future without the alliance, would not utilise the aircraft currently overnighting in Melbourne, or the empty freighters flying to Asia. We also understand that Qantas have already ordered the new Q744ER aircraft. Therefore, one can assume that the claimed 'introduction' of this equipment to 'enhance available capacity', would occur whether or not the proposed alliance proceeds. Secondly, this reasoning makes no mention at all of the decrease of the number of aircraft caused by the proposed alliance that is central to the argument as to the effect on prices and quantities of passenger services.

The second big difference between NECG's treatment of passenger and freight is the way in which changes in capacity are said to affect prices and quantities. As explained in the preceding section of this Report, in its modelling of the prices and quantities of passenger services, NECG assumes that the decrease in capacity for providing passenger services caused by the proposed alliance will have no effect on marginal costs but will affect prices and quantities via the Cournot model by moving the demand curve in towards the origin.

In its analysis of the effects of the proposed alliance on freight services, NECG seems to assume that all of the additional 5.3% freight capacity is fully utilised without causing any decrease in price at all. (pp 32-3) This seems to be a quite different world from that of the Cournot competition that is assumed when modelling passenger services. Indeed, the modelling of freight seems to assume that:

- Price is determined by supply and demand;

- The supply curve is vertical; and
- The demand curve is horizontal.

The NECG Report gives no hint for these dramatic inconsistencies of their treatment of the effects of the proposed alliance on passenger services compared with freight services.

5. The Claimed Public Benefits

The costs and benefits of mergers or acquisitions that are typically considered include the change in consumer welfare associated with resulting changes in prices or quantities, and the changes in producer surplus associated with efficiencies and other sources of cost savings. Table 1 (p 35) summarises the net public benefit calculation of the NECG Report. The detriment is the dead-weight loss; and (according to the Table) this is more than offset by the benefits created by the proposed alliance – the principal elements of which are the cost savings and the increase in tourism. NECG does not argue that there will be any increase in operating efficiency of the two airlines as a result from the proposed alliance. Each of the identified sources of public benefits and detriments (namely, the dead-weight loss) presents problems.

5.1. The cost savings

The cost savings are outlined on pages 136 to 139. It is noteworthy that the NECG Report discusses whether economies of scale may lead to cost savings and concludes that none will arise. NECG states

> 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. (p 135)

Apart from possible synergies associated with improved aircraft selection, none of the scale economies or operating efficiencies that typically form the basis of arguments for the existence of public benefits in mergers is given any positive value by NECG.

Although cost savings due to improved aircraft selection is mentioned as a source of synergies arising from the proposed alliance[25], the modelling approach described by NECG suggests that this is not in fact the key determinant of the estimated cost savings.

[25] The saving is said to arise from 'selecting the lower cost provider' in cases where the two carriers are using different aircraft with differing cost efficiencies. No explanation is offered as to why competition between independent carriers would not force the higher-cost carrier to lift its game.

The reader is provided with no details of the calculations, but these seem to be principally savings attributable to avoiding the hard competition (capacity increase) caused by prolonging the life of Air New Zealand. That is, the cost savings are savings from avoiding the 'wastes of competition' that would arise if Qantas were to compete head-on with Air New Zealand. The NECG Report in essence, argues that because Air New Zealand has no long-term future, the costs of this process of adjustment to the demise of ANZ can be avoided by moving straight to the proposed alliance. In effect, this means avoiding the costs of the predatory increases in capacity. In discussing the source of cost savings, the NECG Report states:

> To begin with, the Alliance permits substantial costs savings associated with avoiding at least some of the duplication of capacity that already occurs and is likely to worsen in the world without the Alliance. (p 29)

> Comparing the factual and counterfactual schedules under a variety of assumptions about VBA entry, there are considerable cost savings available from aircraft rationalisation, because counterfactual schedule involves significant under-utilised capacity compared with the factual schedule. (p 137)

Herein lies the key problem in these calculations, as the cost savings are driven primarily by schedules supplied by the airlines in the proposed alliance. It is not difficult to find cost savings from rationalisation when the schedules provide for excess capacity in the future without the merger.

The Report argues that 'the market' is an inefficient means of sorting out winners from losers, and that it is better to avoid these costs by moving straight to the new equilibrium arrangement:

> '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.' (p 21)

In effect, Qantas is threatening that, if it is not allowed to proceed with the proposed alliance, it will embark on a vigorous increase in capacity. NECG seems to be arguing that the way to avoid the social costs of this excess capacity is not to rely on the abuse of monopoly provisions of the antitrust statutes of the two countries but to allow the proposed alliance to proceed.

The so-called savings flow not as much from the altered structure of the market caused by the proposed alliance, as from representations as to how the parties to the alliance intend to behave in the event that their proposal is or is

not authorised. This suggests that these 'cost savings' are not benefits that derive from the proposed alliance. Rather, the 'cost savings' result from behaviour that the members of the proposed alliance say that will undertake in their 'without' scenario and say they will not undertake in their 'with' scenario.

5.2. Increased tourism

The second large benefit that offsets the dead-weight loss is the supposed increase in tourism. The NECG Report estimates that in the first five years, approximately $1,134 million of net benefits in NPV terms will arise from increased tourism due to the proposed alliance. This is attributed to the activity of Qantas Holidays and the increased effectiveness of promotion. It is offset, to some extent, by the general increase in fares that is predicted by the Cournot model.

The activity of Qantas Holidays is predicted to increase tourists into New Zealand by 50,000 compared to the 'without' scenario. It is not clear that NECG believes this number. They are careful to say that the extra 50,000 tourists per annum caused by the activity of Qantas Holidays is based on 'instructions' they have received (p 148) and that these instructions were verified by Tourism Futures International.

It is very difficult to believe this 50,000 number or, indeed, the estimate of net benefits that is based on the stated increase in tourism numbers. The proposition outlined in the NECG report is highly questionable. It requires that one believes that Qantas Holidays will put an exceptionally large effort into attracting tourists to New Zealand and it will not put in this effort if the proposed alliance were not to proceed, despite the expected profitability of increased promotional expenditure.

As with the argument concerning cost savings, the argument seems to be based on avoiding the wastes of competition. NECG is asking the reader to believe that airlines that are competing (and their associated travel companies) will be less effective at promoting increased tourism (growing the market) than when those airlines have ceased to compete:

> 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 hance 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. (p 150)

This position is stated despite the fact that the under the 'without' scenario, Qantas and ANZ are assumed to substantially increase capacity, which would give them every incentive to invest in growing the market as well as capturing market share.

The Report argues that this expenditure on tourism promotion would be profitable for the proposed alliance (pp 151-153). This raises the question as to why Qantas Holidays would not undertake this expenditure without the alliance. The answer to this question may be a version of a free-rider argument. NECG may be suggesting that Qantas will not undertake the expenditure because the benefits will be partly appropriated by Air New Zealand. However, if the proposed alliance proceeds, the same problem would presumably arise given the assumed entry by a VBA such as Virgin Blue. It is not plausible or consistent with the 'with' and without' scenarios described by NECG that the essence of the argument is a free-rider problem.

Furthermore, to the extent that expenditure on the promotion of tourism is subject to free-rider problems, the solution seems to be to give the task to a government agency such as Tourism New Zealand. Indeed, the best justification for the existence of bodies such as Tourism New Zealand seems to be that promotional activities of the type they undertake will be under-provided by the market because of free-rider problems.

An additional concern relates to the way in which the estimate of the benefits from increased tourism takes into account the reduction in tourism arising from the increase in fares and reduction in capacity (p 156) expected as a result of the proposed alliance. For the reasons described in section 4, these effects are likely to be substantially underestimated. The price reduction expected in the 'without' scenario does not take into account the effect of substantial excess capacity on marginal cost and airfares. Consequently, the reduction in tourism resulting from the anti-competitive aspects of the proposed alliance will be significantly understated.

5.3. Scheduling efficiencies

The NECG report states that the public benefits resulting from scheduling efficiencies will amount to $60 million (NPV) over the first five years of the proposed alliance. This is calculated solely from the estimated benefits to consumers associated with reduced waiting times. NECG does not ascribe any value to factors such as increased aircraft utilisation due to scheduling efficiencies.

NECG's basic proposition is that the proposed alliance could result in ANZ and Qantas having greater incentives to spread flights throughout the day.[26] This could give rise to consumer benefits.

However, the estimates of the public benefit contained in the NECG report are highly questionable for three key reasons.

First, as stated in NECG's report 'the value of time…[to business and leisure travellers]… cannot be assessed with any real accuracy'. (p 142) Any estimated benefits should be heavily discounted because of the standard error inherent in the estimates.

The second and more important criticism is that the analysis is based on a comparison between *current* schedules and schedules expected after the alliance. NECG states that the 'without' scenario cannot be used as the basis for the analysis because it only has information about the number of flights expected without the alliance, not the schedule of those flights. This is equivalent to assuming that the increased capacity expected if the alliance does not proceed would be scheduled at exactly the same time as current services. This is an absurd assumption.

Further, this assumption directly contradicts the rationale used by NECG in modelling output. (pp 114-115) In modelling output, NECG adopts a capacity elasticity of demand of 0.125. That is, NECG assumes that when capacity increases by 1% demand is assumed to increase by 0.125%. The capacity elasticity of demand arises because increased frequency and greater choice

[26] This is based on another 'costs of competition' argument. See for example Hotelling H, 1929, *Stability in Competition,* Economic Journal 39: 41-45

about time of travel results in a more attractive service to customers, leading people to travel more at any given price.

In modelling output of passenger services, NECG appears to assume that an increase in capacity equates to an increase in frequency and choice of schedule. In modelling the scheduling efficiencies, NECG assumes an increase in capacity results in no increase in choice of schedule. If the approach applied was consistent with that used in modelling output of passenger services, and the 'without' scenario was applied as the basis for comparison of scheduling efficiencies, the proposed alliance could be expected to impose costs on consumers as a result of a reduction in frequencies (i.e. scheduling inefficiencies).

Thirdly, the approach to valuing passengers' time assumes that without the proposed alliance, passengers will simply wait at airports for services to depart. In fact, passengers are likely to be being productively engaged in the normal course of business and arrive at the airport in time for their scheduled departure. The assumptions used will substantially overstate the public benefits of any scheduling efficiencies that could arise.

5.4. Direct services

The public benefits of new direct services as a result of the proposed alliance are estimated in the NECG report to be approximately $116 million (NPV) in the first five years. The public benefits are calculated by estimating the value of time saved by passengers travelling on direct flights between city pairs that the Report states would be available as a result of the proposed alliance, and would not be available without the proposed alliance (p 145). Load factors are based on historical trans-Tasman load factor, although it is not stated which city pair route is used to determine the load factors.

As pointed out in section 5.3, the value of time to leisure traveller cannot be assessed with any real accuracy. Any estimated benefits should be heavily discounted because of the standard error inherent in the estimates.

Of greater concern is the basic premise underpinning NECG's argument that the proposed alliance would make it viable for the merged entity to provide direct services on the identified city pairs but that neither airline could viably do so without the alliance. NECG argues that it is currently unviable to offer

direct flights, for example, from Auckland to Adelaide, but that the business case

> …is significantly improved by the Alliance. This is because the Auckland-Adelaide traffic, currently being shared across the Tasman, can be aggregated. This would approximately double the volume expected for a direct service relative to the status quo for either airline. (p 145)

This example would seem spurious, as Air New Zealand currently does not fly to Adelaide at all. This means that there is no 'shared traffic' with Qantas to this destination, and hence, no benefits from their 'aggregation' in the event of the alliance proceeding. More importantly, the economic logic of the argument is highly problematic. The only reason why the proposed alliance could assist the business case for establishing a direct route is if in the 'without' scenario NECG is assuming that if one airline commences direct services on a city pair route, the other airline will also commence direct services irrespective of whether it is profitable to do so. It is highly improbable that this would be a rational competitive response on the city pair routes in question.

If a direct service can be viably provided by only one airline, normal competitive behaviour would result in only one airline (the most efficient airline) providing that service. Other airlines would not commence services knowing that it would result in them incurring ongoing losses, unless they had other objectives.

Consequently, we consider it is inappropriate to count the public benefits of direct services as benefits that result from the alliance.

5.5. Engineering and maintenance

The NECG report ascribes public benefits of $175 million (NPV) in the first five years as arising from Qantas's decision to direct 80% of its subcontracted heavy maintenance to Air New Zealand. The report states that without the proposed alliance the proportion of its subcontracted heavy maintenance to Air New Zealand could be as low as 10% in that five year period.

No support is given for this assertion, and in fact this proposition is contradicted by Qantas's current practice. The NECG report states (p 160) that in 2002/2003, Qantas will direct 78% of its subcontracted heavy maintenance to Air New Zealand.

In the absence of any other evidence or information, arguably the best estimate of public benefits (to New Zealand) from engineering and maintenance is the difference between expected future revenue and current or historic revenue. On this basis, the public benefits taken into account for increased engineering and maintenance expenditure should correspond to the 2% increase in the share of Qantas's subcontracted heavy maintenance that is directed to Air New Zealand in the future as a result of the alliance, rather than the 70% change assumed by NECG.

The second problem with this argument is that it assumes that Qantas will not seek to minimise costs if the proposed alliance proceeds. The Report states that

> 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 result in 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. (p 161)

NECG is, therefore, asking us to assume that Qantas is currently pursuing, and would persist with a high cost strategy if the alliance proceeds, despite the supposed availability of lower cost alternatives. This is clearly not consistent with the strategy a profit maximising company would adopt.

5.6. Net transfers

The NECG Report states that net transfers will give rise to a public benefit of $98 million in NPV terms over the five year modelling period. The net transfers are comprised of transfers between consumers (producers) in New Zealand and producers (consumers) in Australia. Estimated transfers between consumers and producers in New Zealand, and between consumers and producers in Australia are ignored. Little detail is given on the how net transfers are calculated. The Report simply states that:

> 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 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 that comparison reveals that Qantas's net position exceeds Air New Zealand, Qantas will pay half the difference to Air New Zealand and vice versa. (pp 117-118)

Given the information made available, it is not possible to comment on whether the method used for estimating transfers is appropriate or not. It is also unclear if in calculating the transfers to producers in Australia or New Zealand, all benefits accruing Qantas and ANZ are regarded as transfers to Australia and New Zealand respectively or as transfers to countries based on the location of ultimate shareholders in each company,

6. Conclusions

There are many points in the NECG Report where the argument is unclear, highly questionable, or contradictory.

The underlying argument of the Report is that ANZ has no long-term future. The long-term future is for Qantas to share the various markets with a less-direct VBA competitor, such as Virgin Blue. This will produce massive tourism benefits and will avoid the inefficient increases in capacity that would be unleashed if the proposed alliance is not authorised and the parties proceed to engage in aggressive capacity competition.

The detriments of the merger through its lessening of competition are modelled with a version of the Cournot model, which is quite inappropriate for determining the effects of price competition when capacity is given. It is notable that NECG rejects this method for modelling the effects of the merger on quantities and prices of freight.

The arguments about offsetting public benefits are not based on normal efficiency arguments. The two key arguments are that the proposed alliance will avoid wasteful duplication of capacity, and secondly, that it will lead to more effective promotion of tourism to New Zealand. However, neither of these predictions flows from a change in the structure of a market that would follow from the formation of the proposed alliance. Both these changes and the benefits that are claimed to follow from them are based on discretionary changes in behaviour on the parts of Qantas and ANZ.

We have argued that the key public benefits claimed for the proposed alliance are either not benefits that are attributable to the formation of the alliance, or are substantially overstated. If these claimed offsetting benefits are discounted, the only substantial contributor to any assessment of net public benefit would be the detriment caused by the lessening of competition. In this case, clearly the expected benefits identified by NECG as resulting from the proposed alliance would not outweigh the expected costs. The key factor that may lessen that detriment caused by the lessening of competition would be the prospect of entry – providing that entry were on a scale that would effectively replace the rivalry that the proposed alliance is designed to destroy.

Appendix 1

This Appendix supplements section 4 of this report, and provides a more technical explanation of what we understand to be the main mechanisms behind the Cournot model in the NECG Report. The three key effects driving the price and output impact results in Table 10 and 11 of the NECG Report, are that of Cournot competition, changes in marginal costs, and changes in capacity.

A1.1. Effects of Cournot competition

Without any changes to capacity or marginal costs between the 'with' and 'without' scenarios, the Cournot model would show that the output with the proposed alliance (Q_W) will be lower than the equilibrium output without the proposed alliance (Q_{WO}) and the price with the proposed 7alliance (P_W) would be higher than without (P_{WO}) for those routes on which Qantas and ANZ fly in the 'without' scenario. These price and quantity effects reflect a lowering of competition, or an increase in concentration in the market.

Let Q_C. represent the extreme case of output under perfect competition. The other extreme output of pure monopoly will equal to $Q_C/2$ (in the case of a linear demand curve). The proportion of Q_C produced for cases between these two extremes will depend on market concentration as measured by the Hirschman-Herfindahl Index (HHI). So it may be supposed that the effect of the proposed alliance will be to reduce output as a proportion of Q_C from y to x.

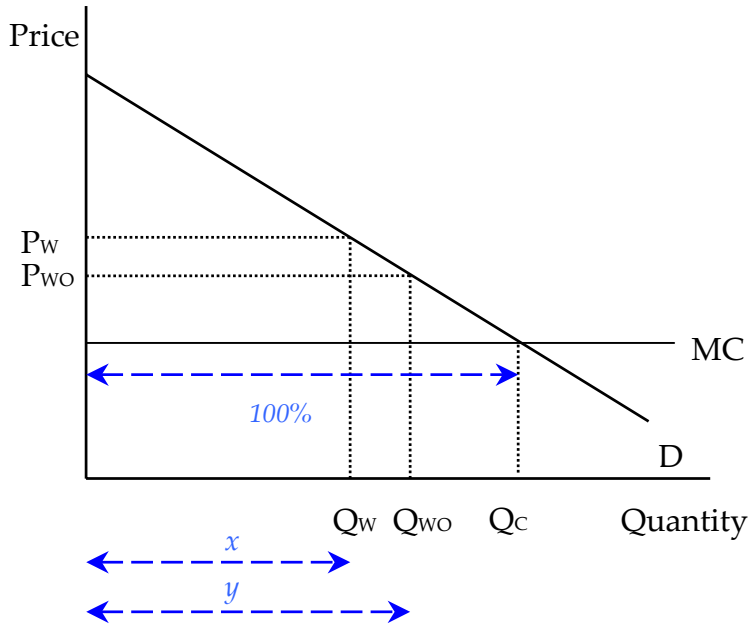
Where,

x = Q_W as a % of Q_C (the output where demand equals marginal cost).

y = Q_{WO} as a % of Q_C (the output where demand equals marginal cost).

As illustrated in Figure 1, the price with the proposed alliance (P_W) will unambiguously be higher than without the proposed alliance (P_{WO}).

Figure 1: Effect of Cournot Competition



A1.2. Effects of changes in marginal costs

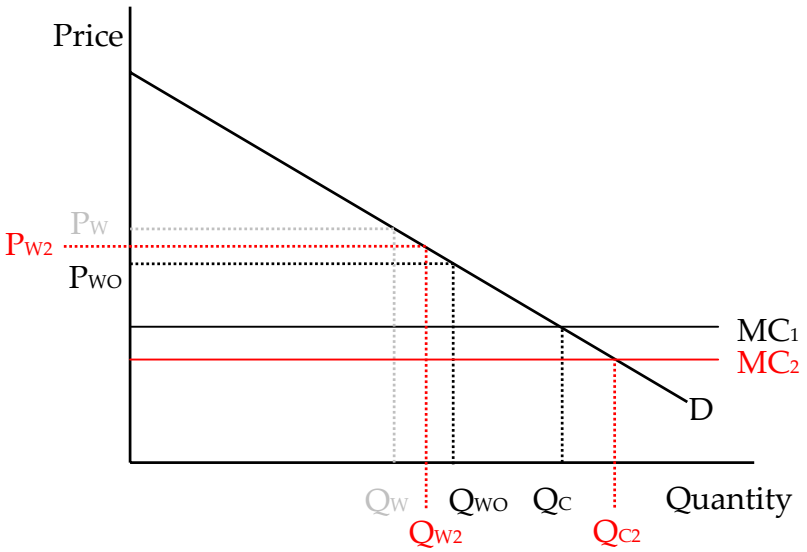
To illustrate the effects of changes in marginal costs in the standard Cournot model, assume that marginal costs do not vary across firms. A fall in marginal costs would unambiguously reduce prices and increase output. An increase in marginal costs would have the opposite effects.

In comparing the 'with' and 'without' scenarios, a rise in marginal costs will only exacerbate the increase in price and the reduction in output as a result of the proposed alliance. Whether a fall in the marginal costs with the proposed alliance will generate a lower price and higher output than without the proposed alliance depends on the magnitude of the change in marginal costs compared with the magnitude of the Cournot effect.

In Figure 2 we depict a reduction in marginal costs from MC_1 to MC_2 which results in a lower price (P_{W2}) and higher output (Q_{W2}). A greater reduction in

marginal costs may possibly push prices below, and output above, that of the base case without the proposed alliance (P_{WO} and Q_{WO}).

Figure 2: Effect of a Fall in Marginal Costs



A1.3. Effects of changes in capacity

As depicted in Figure 3, the NECG modelling suggests that a reduction in capacity, as the markets move from the 'without' to the 'with' scenarios, will tend to reduce both prices and output. So, to the extent that the proposed alliance is assumed to reduce the amount of excess capacity on any particular route, it will tend to supplement the reduction in output caused by the Cournot effect; but it will tend to counteract the Cournotesque price effect.

That is, the reduction in capacity caused by the proposed alliance has the effect, in the NECG modelling, of limiting the extent to which the proposed alliance is predicted to raise prices. Although the price (P_{W3}) resulting from the combined effects of a capacity reduction and the Cournot effect will always be lower than the price which would result from the Cournot effect only (P_W), P_{W3} may be higher than, equal to, or lower than P_{WO}, depending on the size of the fall in demand. Thus, the final price impact of the proposed alliance, resulting from a combination of Cournot competition and a capacity reduction on a particular route, can be positive, zero, or negative, relative to the 'without' scenario.

Figure 3: Effect of a Capacity Reduction (Demand Reduction)