

NECG RESPONSE TO PRESENTATIONS MADE AT HEARINGS – PUBLIC VERSION

New Zealand Commerce Commission, 25 August 2003

1 Response to presentations

This note addresses the substantive issues raised during the course of the Commission's Conference in relation to the proposed Alliance. These relate to the evaluation of the Factual and Counterfactual, the NECG model and allocative, productive and dynamic efficiency, and the assessment of benefits. We close by highlighting aspects of Professor Hausman's analysis that we believe to be erroneous.

2 The plausibility of the Factual and Counterfactual

During the course of the Conference, some have expressed the view that the Counterfactual overstates the level of capacity that would be placed in the market were the Alliance not to proceed. However, we believe it is much more relevant that there was no substantive criticism of the factors which, it was clearly explained, would lead to that level of capacity being provided. In particular:

- Far from critiquing the capacity choices, Virgin Blue stressed the importance of frequency and of offering a wide range of destinations in determining passengers' choice of airline – that is, the role of city presence.
- Professor Hazledine, in contrast, refers to the Counterfactual as “irrational”. However, he has never once explained why Qantas would not seek to increase its net earnings in New Zealand by expanding its city presence. Nor has he engaged with, much less critiqued, the extensive modelling, by Qantas and its financial advisers, which shows that the increase in capacity would be profitable.

Ultimately, the capacity changes we have modelled are consistent with historical experience and commercial behaviour in this market and internationally. Far from involving massive movements relative to the historical pattern, they entail reasonably small and plausible changes as compared to the natural growth Base Case. The airlines' financial advisors have also extensively tested the assumed capacity changes under the Counterfactual. We therefore continue to believe that they provide a sound basis for the analysis of the Alliance's impacts.

In the following sections, we consider issues relating to the way in which the Factual and Counterfactual are translated into estimates of detriments and benefits arising from the Alliance, starting with those relating to the NECG model.

3 Allocative efficiency

3.1 The NECG model

As we have stated, no useful economic model can be like a map drawn on a scale of one to one; rather a degree of simplification is inevitable and desirable. That said, we believe that any model simplifications should be subject to sensitivity tests. This is so long as one is not doing these tests in a way that involves, to use an analogy, seeing whether a machine that has been designed to be a refrigerator makes a good washing machine. To continue the analogy, before one sets about stress testing, it is important to understand the machine one is dealing with, and how it compares to other machines of its kind.

There have been four issues that have been raised repeatedly in the questions put to the economists during the Conference which relate to the NECG model. In our view, these questions, though useful in highlighting areas where clarification is needed, show some limits in the understanding of the relevant models. Each of these four issues is discussed in turn.

3.1.1 The treatment of capacity

The first question is that of the treatment of capacity in the NECG model, and related to that, of whether the NECG model is indeed a full Cournot model, or is simply some kind of price calculator.

To understand this question, it is important to understand that *capacity* and *output* are somewhat different, though obviously linked. Simplifying, capacity relates to the number of aircraft flying around; output is the number of people who fly on them. From a social perspective, it is output that is valued. We note that models put before the Commission are similar in terms of how they treat capacity and output:

- In *all* of the models put before the Commission, *capacity is exogenous*. That is, capacity is determined by defining a factual and counterfactual supply, which is not given within the model itself. This is done because determining capacity is a complex matter, which requires a great deal of expert judgement best left to the airlines. And that is what the models here do. In that sense, the NECG model is simply no different from Professor Gillen's model or Professor Hazledine's model.

- In *all* of the models before the Commission, *output is determined endogenously*. That is, output is determined within the model. Again, in this sense, the NECG model is simply no different from those of Professors Hazledine and Gillen.
- *Each* of these models has a similar algorithm for calculating consumer and producer benefits: marginal costs are determined; then given demand elasticities, prices and outputs are calculated; and these are then used to derive estimates of the net consumer and producer benefits from service.

As a result, it is incorrect to assert that there is some sense in which the NECG model is not quite as Cournot as the other models on the table. *Rather, the key difference is the way in which the models make use of these exogenously determined capacity levels.*

To elaborate, all Cournot models require some way of calibrating – that is, determining marginal costs. In the NECG model, this is done by using *Factual* capacity, as determined by the parties. As explained in the course of these proceedings, this was done so as to be able to rely on the commercial expertise of the parties in determining the pattern of marginal costs, rather than having to make our own assumptions. Additionally, as Professor Willig emphasized, by doing things this way, the impact of network effects is captured.

In that sense, *Factual* capacity does play a role in our model, since the marginal costs thus calculated affect final output. In contrast, the approach adopted by Professors Gillen and Hazledine was to use the *Base Case*, rather than the *Factual*, to calibrate initial marginal costs. If we had adopted this approach, detriments would have *declined* relative to those we calculated – that is, our approach consciously over-states the detriments relative to those that would have come from the simpler calibration of the model off base case market shares.

In addition, the difference in capacity between the *Factual* and *Counterfactual* is used to calculate savings in total capacity costs, which is done separately from the determination of output levels. Changes in capacity costs are calculated by comparing non-passenger related costs (in the sense of costs that do not vary directly with respect to changes in passenger numbers) in the *Factual* and *Counterfactual* respectively. These too need to be brought to account when considering a total welfare test. *However, so long as capacity and output are treated separately, this is distinct from the information that is generated directly within the parties' Cournot model.* A separate computation is therefore required to calculate cost savings.

3.1.2 The relation between Factual capacity and welfare

Building on this basis, we now turn to a second source of confusion: the relationship between changes in *capacity* and changes in *welfare* in the NECG model and in the other models before the Commission. Much has been made of what has been described as a perverse relationship, in the NECG model, such that as *Factual* capacity is reduced, welfare increases.

To be clear, using the NECG model, a small reduction in the Alliance's factual capacity has three impacts:

- First, the lower the Alliance's factual capacity, the higher the Alliance parties' estimated marginal costs (as the Cournot assumption implies that firms with relatively low levels of output are assumed to have relatively high marginal costs), and as a result, the lower will be the detriment from the Alliance, as it is bringing together players who are relatively less competitive and as price in the counterfactual will be higher, due to higher marginal costs.
- Second, in our modelling, as in Professor Gillen's, consumers value higher capacity – for example, because the amount of capacity affects their chance of getting a seat on a plane, should they want one. Hence, a reduction in factual capacity increases the detriment involved in moving from the counterfactual to the factual. Now, for relatively small changes in factual capacity, the second effect somewhat outweighs the first, so the allocative efficiency loss increases slightly. This increase is going to be a small number, essentially because it involves, in a geometric sense, the calculation of a *small triangle*.
- However, there is also a third effect. As noted above, capacity cost savings need to be brought to account. If the Alliance could save a *further* 10 per cent in capacity cost by reducing capacity even more, then that benefit – of better use of aircraft capacity – would rise. Now, this further saving is not a small triangle, as depicted above, but rather a *large rectangle*.

In essence, because the small triangle is more than offset by a large rectangle, the NECG model calculates a welfare increase when factual capacity is reduced.

While this story seems intuitive, it must be qualified.

In particular, in the event that capacity was cut further, the Alliance could hardly expect to retain prior output or increase output further, assuming appropriate post-Alliance capacity to start with. Rather, as it decreased capacity, its output would eventually have to fall, and (assuming other firms do not simply replace it – which is the assumption made in the Commission's modelling) the allocative efficiency loss would rise. Not only would it rise, but

it would rise ever more steeply, since the demand curve would not be linear as capacity shrank closer and closer to the origin.¹

The point is that this effect from capacity to output is completely overlooked in the Commission's stress testing. This is because in the NECG model, as in all the other models before the Commission, *capacity is exogenous*. Hence, one cannot change capacity without ensuring that the output levels being used make sense relative to that capacity choice: the model itself will not do that test, and thus prevent the claiming of cost savings that would never be attainable. *The model will not, in other words, prevent one from assuming that there will only be a limited amount of capacity (and hence be able to bring costs right down) but which would then be able to serve the market as if there was a substantial amount of capacity in place.*

As we have stressed, this effect is by no means particular to the NECG model. Rather, it will occur in all of the models before the Commission, as they do not, and *cannot* properly, solve for total capacity costs. They treat these costs as exogenous because airline total cost functions are extremely complex, and deriving total costs, on an interdependent, complex set of separately identified city-pairs, involves a large number of expert judgements.

For example, if capacity elasticity is set to zero in Professor Gillen's model, one could then, adopting the Commission's approach, easily – indeed, even more easily than in the NECG model – derive the result that bringing factual capacity to zero would yield welfare gains. In effect, the fall in factual capacity would have literally no effect on the model estimated deadweight loss, while, by assumption, there would be a 100 percent saving of costs.

Whether or not this is a flaw depends on whether, using the analogy described above, one believes that refrigerators should also be able to serve as washing machines. The models derive prices and outputs on the assumption that aggregate capacity is being determined elsewhere but is nonetheless consistent with the output levels that ultimately emerge. Given that, if one wants to change the latter, one needs to ensure that what is being done makes sense in terms of the relation to the former.

In short, because the models are fairly simple, one needs to think very carefully to ensure that the questions one asks them are good ones. Otherwise, one will think that capacity can be shrunk while output remains the same.

¹ NECG's modelling of linear demand is obviously only intended to capture an approximation to small changes in the area of the factual and counterfactual output. As price increases ever further relative to the base case, the demand curve will not be linear.

In our view, there are many other problems involved in the way this sensitivity test has been carried out, and they all have the effect of increasing the estimated saving while reducing the estimated allocative efficiency loss. To cite but one, there seems to be some confusion between shifts in average total cost curves and movements along average total cost curves. More specifically, in calculating the cost saving associated with the move to 90 per cent of capacity, the sensitivity test as carried out implicitly projects a line from the capacity cost in the factual at 100 percent towards the origin. This implies either that the average total capacity cost curve slopes to the origin (i.e. there are no density economies) or that for some reason the move to 90 per cent of capacity induces a downward shift in the average total capacity cost curve (which would make no sense). Rather, we believe the correct way to conceptualise the situation is that:

- The average total capacity cost curve shifts down as a result of the Alliance, since the parties, by coordinating their capacity decisions, can serve output at a lower unit capacity cost at all levels of output;
- Both the Factual and the Counterfactual average total capacity cost curve display economies of density in the relevant range;
- A move along the Factual cost curve, from 100 per cent to 90 per cent of Factual capacity (as the Commission models), will be associated with higher average total capacity costs, as density economies are lost.

An additional issue is that in a standard welfare analysis, it is double counting to treat a saving in cost associated with monopolistic output restriction as a social gain. These gains are excluded from NECG's analysis but seem to be included in the sensitivity test.

The bottom line is that far from showing that the NECG model is flawed, the 90 per cent sensitivity test simply highlights the importance of asking the right questions when one sensitivity tests complex models. If the objective is to test a reduction in capacity, then first, this must link to the number of passengers carried, and second, there will be a cost saving associated with monopoly output restriction, which cannot simply be treated as a social gain. We believe the NECG model treats each of these issues correctly, and hence avoids the traps identified.

3.1.3 The sectors where capacity and price increases in the Factual

This leads to the third issue raised in the questions about the NECG model, which is the fact that on some sectors, prices rise in the factual while capacity increases. The simple reason for this is that the relation between capacity, price and output in the models here at issue is indirect. We model an increase in capacity on certain sectors in the Factual, which is generally due to the greater ability of the Alliance to make the sectors commercially

attractive. However, because capacity only affects output through the indirect channels noted above, we do not allow for downward pressure of greater capacity on price. Rather, the opposite occurs, because, in the Cournot technology, the Alliance's higher Factual capacity increases the Alliance's market power, hence increasing the price detriment caused by the Alliance. This is one of the ways in which our use of Factual capacities as the basis for calibration is deliberately conservative.

In practice, of course, things would not work in this extremely conservative way. There would be a more direct link, and the Alliance's greater capacity would lead it to reduce price. Indeed, in the financial modelling of the parties and of their financial advisers that is exactly what happens, so one does not observe, in those models, the price increases our modelling generated.

The price rise NECG models on these routes is visible because the NECG model is disaggregated – this avoids aggregation error and also makes route-by-route analysis simple. It should also occur in the other models, if they are run in route-by-route mode and capacity is higher in the Factual than in the Counterfactual. However, in the NECG model, the effect is in practice accentuated by the use of Factual calibration (that is by keying marginal costs off Factual capacity). That said, as we have noted, if base case capacity were used instead (as Professor Willig recommends), total detriments would be **lower** than we estimated. NECG's approach is therefore conservative.

Product differentiation

The fourth and final issue on the NECG modelling approach relates to product differentiation. Professor Hausman said that NECG had not modelled product differentiation, which is incorrect. We presented evidence that we had done this in two ways.

- The first approach, which Professor Willig noted is entirely standard in Cournot models, is to model a firm that offers a product that consumers find inferior as having a higher marginal cost.
- A second approach, which is similar to that adopted by Professor Gillen, explicitly introduces a cross-price elasticity of demand assumption into the model. Here, the findings depend critically on the assumptions made.

Importantly, in both of these approaches, the VBA is treated as exercising significantly *less* price discipline on the FSA than would a comparably sized FSA. This stands in stark contrast to commercial reality, as well as from the econometric work of Professor Morrison and Dr Winston, that VBA's impose greater price discipline than do comparably sized FSA's. In Dr Winston's term, 'identity matters' – not all competitors are alike. This is supported by the fact that consumers and financial markets show no sign of shunning the VBA experience.

Indeed, in the models of Professors Gillen and Hazledine, the VBA has half the impact on the FSA that would be exercised by a comparable FSA.

While some have argued that because of Air New Zealand's changes to its products, the VBA would be a less close competitor, the reality is that the changes have moved the FSA product closer to, rather than further from, the VBA product. As a result, the cross-price elasticity of demand will have *increased* even further, rather than fallen.

Hence, we believe it is incorrect to model the VBA as if it were an ineffectual competitor. At the same time, so as to be conservative, we did not seek to model it as a 'killer brand'. Here too, we erred on the side of caution.

3.1.4 Conclusions on NECG modelling

The preceding sub-sections can be summarised as follows:

- First, the NECG model is no less a Cournot model than the other models on the table;
- Second, the claimed inverse relationship between capacity and welfare in the NECG model makes little sense and seems based on a misunderstanding of the functionality of the NECG model;
- Third, the fact that both prices and capacity increase between the Factual and Counterfactual on some sectors is the result of using a route-by-route model (which avoids aggregation error) and of our conservative decision to calibrate the model from Factual capacities; and
- Fourth, we treat the VBA in a conservative way, though even altering our assumptions in that respect, so long as it is done sensibly, does not much change the results.

Our view is that each of these points highlights the strength of the NECG model in that, though not on a scale of one to one, the NECG model estimates welfare changes in a sensible, consistent and transparent way.

3.2 Professor Hazledine's modelling

We retain our serious concerns with respect to Professor Hazledine's analysis. In particular, we believe there are problems associated with his characterisation of the Alliance as a cartel, his use of the CV parameter, as well as the presentation of his findings.

Turning to the first issue, it is incorrect and misleading to describe the Alliance as a cartel. There is a substantial economic theory of cartels. A key feature of a cartel is that it only makes sense if the parties in the cartel expect those firms that are not members of the cartel to follow their pricing lead, or at least not disrupt it severely. This is because the members of the cartel do not secure any efficiencies that would increase their profits regardless of what other firms do.

Now, in the Alliance at issue, the opposite is true: the Alliance's profits increase first and foremost because the Alliance parties become more efficient by being able to coordinate their capacity decisions. Indeed, in Professor Hazledine's modelling, if one takes the scenario which he now rightly says is relevant – that is, the scenario in which you get VBA entry in both the factual and the counterfactual – the Alliance's profits would *fall* as a result of the Alliance unless the Alliance's efficiency increased. This is, in our view, a correct result. It highlights both the need to take those efficiency gains into account and the inappropriate nature of referring to the Alliance, which is essentially a joint venture, as a cartel.

On the second issue, which relates to Professor Hazledine's use of a CV parameter which reflects competition more intense than Cournot, we believe this is flawed in at least three respects.

- (a) If one accepts the Brander-Zhang methodology, the CV parameter is testable, and when this is done, the finding is that the market is Cournot. As a result, it is not clear why a CV parameter is chosen that is more or less competitive than Cournot.
- (b) It is incorrect to believe that even in the simple static models of the kinds we have here, the choice of the Cournot assumption, rather than of a more competitive CV parameter of the kind Professor Hazledine has at times chosen, understates the competitive detriment. Rather, when competition is more intense than Cournot, then a move from (say) a market with three firms to a market with two firms will cause less detriment than it would were the market Cournot. In effect, when the NECG model is run, which is a more disaggregated model than Professor Hazledine's and hence has significantly less aggregation error, with a CV parameter of -0.5, the deadweight loss reduces by two-thirds. Our use of the Cournot assumption is, in this sense, conservative.
- (c) Crucially, if one wants to use a CV parameter that is more competitive than Cournot, then one needs to explain why firms would act in that manner. We note that this question was put to Professor Hazledine, and we believe his response was correct: "when you slash price, you are investing in something". More specifically, consistent with economic analysis in this area, when behaviour of this type is observed, this can be characterised as firms investing in altering

expectations of future conduct. In essence, in dynamic oligopoly models, the periods where the CV parameter is more competitive than Cournot exist because firms are being less competitive than Cournot in the other periods of the game, with the two being inextricably linked in an essentially collusive super-game.

In simple terms, the problem with Professor Hazledine's approach is that he chooses to only model selective periods of more intense competition, rather than also modelling the extended periods of less intense rivalry. In other words, he captures the consumer gains from periods when price is low, but not the social loss from the necessarily longer periods when price is high. Recognition of this means that, if one holds the genuine belief that there are periods when the CV factor is very low, and one accepts the current economic theory that says those periods form part of an essentially collusive super-game, the Cournot assumption is conservative, and possibly very much so.

Turning to the third issue, the single most striking fact is that Professor Hazledine has dramatically scaled back his views of the losses due to the Alliance. Initially, he estimated consumer losses of \$300 million a year. Now, Professor Hazledine says that consumers would lose between \$50 and \$300 million a year, with one-third of that being deadweight loss. However, in working through his model, it is clear that the range in fact varies between a \$300 million loss and a \$100 million gain.

Importantly, this range includes scenarios that are now irrelevant, including the following:

- Scenarios that Professor Hazledine, in replying to Professor Gillen, agreed were now irrelevant, since they assumed the VBA would not enter in the Factual.
- Scenarios in which VBA output is fixed. As Professor Willig noted, there is no reason to make such a modelling assumption, which is profoundly inconsistent with the modelling framework used.

Eliminating scenarios that involve no VBA entry under the Factual reduces this range from a \$230 million loss to a \$100 million gain. Eliminating scenarios in which VBA output is fixed leaves one remaining scenario, which estimates a surplus gain to New Zealand consumers of \$96 million per year. In this scenario, there is, in other words, no detriment to consumers. Since the parties are entering into this Alliance voluntarily, there must be a gain to producers.² As a result, simple welfare economics (modelled gain to consumers, presumed

² In calculating transfers, Professor Hazledine does not take account of the Qantas capital injection. This will over-state the loss of producer surplus New Zealand incurs. The only loss

gain to producers) suggests *the Alliance must, in Professor Hazeldine's modelling, increase welfare.*

3.3 Conclusions on Modelling

To conclude, there has now been a significant degree of convergence in estimated allocative efficiency losses. Estimated using even a highly conservative modelling framework, the allocative efficiency detriments from the Alliance are slight. That said, the NECG model remains the most appropriate framework for analysis and meets the criteria set out for model evaluation by Professor Willig.

4 Productive and dynamic efficiency

The Commission, in its Draft Determination, also found significant detriments in productive and dynamic efficiency.

Professor Hausman concurred with the Commission in believing the scale of these detriments would be large. He suggested that these losses would arise due to rent seeking, in particular, the strength of labour unions in appropriating profits. This assertion, which Professor Hausman did not evidence, seems inconsistent with the fact that SouthWest, one of the most profitable airlines in the US, is also one of the most highly unionised.

We have presented written submissions that we believe demonstrate substantial double and potentially triple counting of these detriments in the Draft Determination. Moreover, we believe the Draft Determination's estimates of these losses are not supported by evidence. In particular, we showed in our written response that the OECD model was not used correctly. We also presented evidence to show that Qantas' productivity had increased rather than diminished when Qantas' had entered into Alliances and when exogenous events (such as the collapse of Ansett) significantly increased Qantas' market share. Finally, we note that competitive constraint will remain vigorous, with VBA entry in the most affected routes and continued intense competition in long haul markets.

Ultimately, the parties' shareholders have every incentive to ensure that the Alliance partners operate at least cost. The Alliance provides them with greater, rather than lesser, opportunity to do so, and here, if anything, a benefit should be imputed to the Alliance.

is that associated with payments in excess of the WACC on the amount invested by Qantas. In an ex ante, this could be taken to be zero.

5 Benefits

Having considered the potential detriments from the Alliance, we now consider those benefits likely to arise from the Alliance.

We believe cost savings flow directly from the difference between the Factual and Counterfactual. In our view, these are now well established. In particular, we believe that there has been clear demonstration that the difference between these two future scenarios does not arise due to some substantial, irrational expansion.

However, there remains controversy over the tourism impacts and the overall benefits which would flow from these. We make the following points on these particular issues.

First, the impacts we have used as the basis for quantifying benefits of tourism does not involve the assumption that under the Counterfactual Qantas would act irrationally. Rather, as we explained, the fact of the matter is that firms that are competing for customers have no incentive to help each other out. It is entirely unsurprising that Qantas Holidays is not willing to market on behalf of Air New Zealand in the Counterfactual.

Second, the main impact of the Alliance, in our view, is to remove constraints that would otherwise severely limit Air New Zealand's ability to attract tourism.

Third, we have taken full account of the modelled price and output changes in calculating changes in tourism flows. This is, in our view, extremely conservative. Tourism markets are likely to be highly competitive, as tourists have a choice of destination. Demand will therefore be highly price elastic and even a monopolist will not have substantial power over price. To assume the full flow through of the Cournot price changes to tourists is therefore conservative.

Fourth, we think our promotion effects are conservative. If it was indeed believed that the Alliance would lead to greater concentration, this should increase tourism promotion. In effect, the firm that owns the only bridge that crosses to an island has an especially marked incentive to promote that island. We note, in this respect, that Japan (which is served only by Air New Zealand) is one of New Zealand's most successful sources of tourists, and that Air New Zealand promotes especially actively in that market.

Fifth, we used a CGE model to evaluate these impacts because we wanted to account for the fact that resource constraints might limit the gains New Zealand makes from further tourism expansion. We used the Monash model to do so because it is extensively tested and very well documented. Had we used the most closely equivalent New Zealand model we would have obtained significantly greater estimates of the tourism gains.

Sixth, we did not use CGE to estimate the impact of other sources of savings because these either have few or only positive intersectoral effects.

6 Evidence of Professor Hausman

We believe that some views expressed by Professor Hausman in the course of his testimony contain errors. For instance, Professor Hausman's testimony with respect to the funding of FSA capital requirements is inconsistent. Professor Hausman first argued that US FSAs face substantial difficulties in raising capital. However, when posed with the question as to how Air New Zealand would fund its capital investment going forward, he believed that those same constraints would not be brought to bear on Air New Zealand. This is despite the fact that Air New Zealand has consistently failed to recover its costs of capital in the last decade. **[Confidential information removed]** We believe that Professor Hausman's presumption that Air New Zealand would somehow be treated differently to its US counterparts by capital markets is implausible and not supported by evidence.

Professor Hausman also overlooks important evidence in evaluating the likely competitive effects of the Alliance on AKL-LAX. In particular, Professor Hausman was highly disparaging of the NECG model because it estimates no price and output changes on AKL-LAX for Year 1 and Year 2 of the Alliance [Transcript, page 23]. He described the alleged error as one "no respectable economist in the world would make," "inconsistent with economics" and an approach that "doesn't make economic sense." The simple explanation – and one that is clearly documented in the NECG Report – is that the Alliance does not come into effect on this sector until Year 3. There would therefore be no change in competitive conditions for these first two years, and so no need to model any change in price-setting behaviour.

We make two comments regarding Professor Hausman's critique of Dr Winston's analysis, which considered the impact of Virgin Blue on fares in the Australian market:

- First, Professor Hausman derives his result, according to which price discipline was significantly greater when there were more carriers in the market, by including in his fare regressions airlines, most notably Impulse, who could not survive and were charging prices well below their costs.
- Second, Professor Hausman reduces the estimated impact of Virgin Blue's effect on fares by including in his regressions time dummies. We note that in response to a question from Professor Gillen, he readily accepted that these time variables picked up the impact of Virgin's growth [Transcript page 39]. In simple terms, the effect of this adjustment is to shift part of the estimated impact of Virgin Blue on fares away from the Virgin Blue coefficient to the time trend. We believe that this adjustment

should not alter the key message which is that, over time, Virgin Blue's entry has forced fares down to levels that are well below those seen *even when the market as a whole was far less concentrated*.

We therefore believe the econometric evidence supports the view that VBA entry and expansion, even when it occurs in a market that is becoming more concentrated, exercises a material effect in disciplining price. Though Professor Hausman disputes this, it seems strongly consistent both with the views of market participants and with the evidence set out in the paper by Professor Morrison and Dr. Whinston.

This is not to say that prices might be even lower if there were more firms in the market. However, there is no reason to expect their marginal effect to be high. Additionally, there is no reason to expect those firms to be profitable; as a result, the effect would be neither sustainable nor economically efficient. We believe that this conclusion is consistent with the Australian evidence.

Turning finally to the issue regarding the importance of taking account of option value, Professor Hausman maintained that there was significant upside to retaining Air New Zealand outside of the Alliance, and that this upside would be lost were the Alliance to proceed.

The fact of the matter is that NECG has modelled, in its core counterfactual, the upside associated with not allowing the Alliance to proceed. This is an inherently optimistic view of the world, as it is based on the premise that Air New Zealand could remain an effective competitive force over the period modelled. Working on that premise, our results show that proceeding now with the Alliance, even on the assumption that Air New Zealand could remain an effective competitive force over the period modelled, yields substantial benefits to New Zealand.

However, there is also a significant downside to this option. Air New Zealand has consistently earned less than even Infratil claims is the minimum WACC it needs to be able to attract investment. There is, as we have noted, every prospect of a 'war of attrition' with Qantas which would place great strain on Air New Zealand. We think there is a high likelihood that placed under this strain Air New Zealand would either need to retrench on a major and perhaps ultimately uncontrollable scale, or require increasing (and highly costly) public subsidies. The overall outcome would be to impose high social costs to New Zealand, both from the retrenchment process for a major employer and from the loss of the wider benefits Air New Zealand now brings.

What this implies is that the option of not going ahead with the Alliance has little upside and significant downside. A rational cost benefit analysis therefore suggests that the option of entering into the Alliance ought to be exercised now. This is all the more the case as the

scope for engaging a similar Alliance, on terms as advantageous as those now on the table, cannot be assumed to persist. Denying authorisation would therefore bring increased risk of social losses, while foregoing the net benefits the Alliance offers.

Confidential Graph 1

[Confidential information removed]