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Cost benefit analysis of the NZRB and Tabcorp proposed wagering commingling arrangement

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1. Introduction

The New Zealand Racing Board (the NZRB), which operates the TAB, New Zealand's racing and sports betting agency, is seeking authorisation for an arrangement that it intends to enter into with Tabcorp (the NZRB's equivalent in Victoria, New South Wales and Australian Capital Territory). We have been asked by MinterEllisonRuddWatts to analyse and quantify (where practical) the benefits and detriments of the proposed arrangement.

In this report we present a social cost benefit analysis of the proposed arrangement, from a national perspective. As is common in cost benefit analysis,[1] we take a partial equilibrium framework, under which we only assess direct effects in the relevant markets at issue, and do not account for indirect/flow-on effects in markets further downstream.[2] All benefits and detriments that we quantify are reported in real terms (i.e., are not adjusted for inflation over time).

In summary, we find that the proposed arrangement has a public benefit of [   ], in net present value terms over a five-year period. The benefits arise because the proposed arrangement enhances the quality, and increases the variety, of Australian race pools in which New Zealand consumers can bet with the NZRB. This enhances both consumer and producer surplus, although our quantification only captures the latter effect. There is also a benefit from costs that are avoided by the NZRB in establishing betting services (of lower quality) absent the proposed arrangement.

We also find a range for the detriments from the proposed arrangement of [   ]. These detriments arise in respect of a subset of customers, VIPs, who might face a price increase due to a restraint on the ability of the NZRB and Tabcorp to offer rebates under the proposed arrangement. We note, however, that these customers do not reside in New Zealand, and so there is a question as to whether any reduction in their consumer surplus is even relevant to the analysis under the Commerce Act.

2. Background

The NZRB is seeking authorisation for an arrangement with Tabcorp that provides for the commingling of betting pools, including certain restrictions on participation in those pools. Commingling arises in respect of pari-mutuel (or totalisator) wagering on racing (horses and greyhounds). In pari-mutuel wagering, wagering customers (or punters[3]) place bets on a race and the total value of all bets placed is consolidated into a pool. Each bet-type (e.g., win, place, trifecta, etc) has its own pool into which the bets are consolidated. The totalisator operator then

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[1]   See New Zealand Treasury (2015), "Guide to Social Cost Benefit Analysis", July, paragraph 178.

[2]   The NZRB has also analysed the consequences of the proposed arrangement on inter-related agreements it has with other parties. We have not captured this in our analysis.

[3]   We use the terms customers, consumers and punters interchangeably throughout our report.

deducts a pre-determined percentage amount (the "take-out rate") from this pool, and the remaining pool amount is paid out to the winning punters in dividends.

Commingling allows bets placed into one totalisator organisation's pool to be combined (or commingled) with the pool of another totalisator organisation, to provide a single pool with a larger value of pooled bets.

The proposed commingling arrangement would allow bets placed by New Zealand punters on Australian races through the NZRB to be commingled into Tabcorp's pools for those same races.[4] Similarly the arrangement would allow Australian punters to place bets with Tabcorp on New Zealand races, with these bets being commingled into the NZRB's pools on those races. The totalisator organisation with the original pools is referred to as the "host", while the organisation that is commingling into those pools is the "guest".

In addition, the proposed arrangement would place some restraints on the ability of the NZRB and Tabcorp to offer rebates to customers. For some high-value customers, the NZRB and Tabcorp may consider providing a rebate, where a certain proportion of the customer's betting amount is rebated back to the customer, regardless of whether or not the customer achieves a winning bet.

The proposed arrangement would restrict the ability of the NZRB to offer such rebates to certain high-staking, "VIP" customers for bets that are being commingled into Tabcorp pools. [

].[5] We

are advised by the NZRB of its view that [

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[

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[4]   We understand that the Tabcorp pools into which bets through the NZRB can be commingled are for both Australian and international racing. For simplicity throughout our report, we frequently refer to this as just Australian racing.

[5]   [

]

].[6]

In our analysis in this report we take as the factual the proposed commingling arrangement, along with the rebate restraints. We understand that, absent these rebate restraints, Tabcorp would not permit the NZRB to commingle into Tabcorp pools. Therefore, in the counterfactual, if the NZRB wanted to offer wagering on Australian racing, it would have to establish its own pools (but it would be able to offer rebates in respect of these pools). We understand also that,
[

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As we describe in section 3 of this report, the ability for the NZRB to comingle into Tabcorp's pools would enable the NZRB to offer higher quality and a broader range of products to New Zealand punters, resulting in consumer and producer surplus gains.

As we describe in section 4 of this report, any detriments to New Zealanders from commingling would be small:

[

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[6]   [

]

3. Benefits

3.1. The conceptual framework for assessing benefits

The Commerce Commission's framework for assessing the public benefits (and detriments) of a transaction involves identifying the efficiencies that would arise from the transaction.[7] The economic approach to identifying efficiencies is to assess changes in total producer and consumer surplus arising from the transaction.

In the present case, consumer surplus is the additional benefit that New Zealand punters would receive by wagering on racing pools, in excess of the "price" they pay for that wagering. Similarly, producer surplus would be the price for wagering that the NZRB would receive in excess of its production costs (essentially profits).

The best way to conceptualise the "price" paid by racing punters in pari-mutuel wagering is the relevant take-out rate that is deducted from the pool by the totalisator organisation, net of any rebates paid to punters. It is this amount that the totalisator organisation receives for offering the wagering service, and that the punter effectively pays (the take-out rate reduces the potential dividends that the punter will receive on a winning bet).[8]

The total quantity or volume of wagering services is measured by the total dollar value of bets placed with the totalisator organisation.[9] This is referred to as "betting turnover" in the racing industry. The totalisator organisation's revenue is determined by multiplying the take-out rate by the value of bets placed – the industry terminology for this revenue amount is "gross betting revenue" (when rebates, GST and other taxes/duties are excluded, the remaining revenue is referred to as "net betting revenue"). Suits (1979, p.156) points out that, even though betting turnover and betting revenue are both denominated in dollars, they are "conceptually distinct, and care should be taken to avoid confusing them. The total volume of wagers handled is no more "revenue" to a betting establishment than the total value of houses traded constitutes "revenue" to a real estate agent".[10]

Given the price and quantity of the wagering service, a standard downward sloping demand curve can be illustrated, as shown in Figure 1. A similar demand curve is specified in the economics literature on wagering demand, and this allows demand elasticities to be calculated in the standard way – see, for example, Suits (1979)[11] and Pescatrice (1980).[12] As is often the

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[7]   Commerce Commission, "Authorisation Guidelines", July 2013, paragraph 36; and *Godfrey Hirst NZ Ltd v Commerce Commission* (2011) HC WN CIV 2011-485-1257 at [50]-[53].

[8]   The take-out rate as an expression of the price of the wagering service is also supported in the economics literature – see, e.g., Daniel B. Suits (1979), "The elasticity of demand for gambling", *Quarterly Journal of Economics*, 91(3), 155-162.

[9]   Note that the volume is not measured by the number of bets, as the size of bets is variable.

[10]   Suits, 1979, *op. cit.*

[11]   Suits, 1979, *op. cit.*

approach taken by the Commission, we assume that the supply curve is horizontal,[13] and the equilibrium take-out rate[14] is given by P1 with an associated wagering quantity of Q1. In this particular case the demand curve is the residual demand curve faced by the NZRB for demand by New Zealand punters for pari-mutuel wagering on Australian racing. Similarly the supply curve is the NZRB's residual supply curve.

Figure 1 also illustrates consumer and producer surplus: consumer surplus is the shaded area below the demand curve and above the take-out rate, and represents the surplus that New Zealand punters gain from betting on Australian racing through the NZRB. Producer surplus is the shaded area above the supply curve and below that take-out rate, and is the gain to the NZRB from offering betting on Australian racing.

Since the NZRB's take-out rate varies for different bet types (e.g., take-out rates for a "Win" bet differ from take-out rates for a "First4" bet), the take-out rate determined in Figure 1 is a weighted-average take-out rate across these different bet types.

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[12]   Donn R. Pescatrice (1980), "The inelastic demand for wagering", *Applied Economics*, 12(1), 1-10.

[13]   See, for example, the Commission's approach in the *Ruapehu/Turoa Ski Resorts* merger authorisation, Decision 410, 14 November 2000 and the *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, 2015 NZCC 31, 12 November 2015.

[14]   The take-out rate that we depict is what we refer to as the "net take-out rate" (i.e., excluding GST, rebates, etc), from which net betting revenue is determined. We understand that, in the racing industry the term "take-out rate" is only used to express the gross amount that the totalisator organisation deducts from the pool. Nonetheless, for ease of exposition in this report, we refer to the "net take-out rate" when discussing the price of a totalisator wagering service.

Figure 1
Illustration of consumer and producer surplus for pari-mutuel wagering
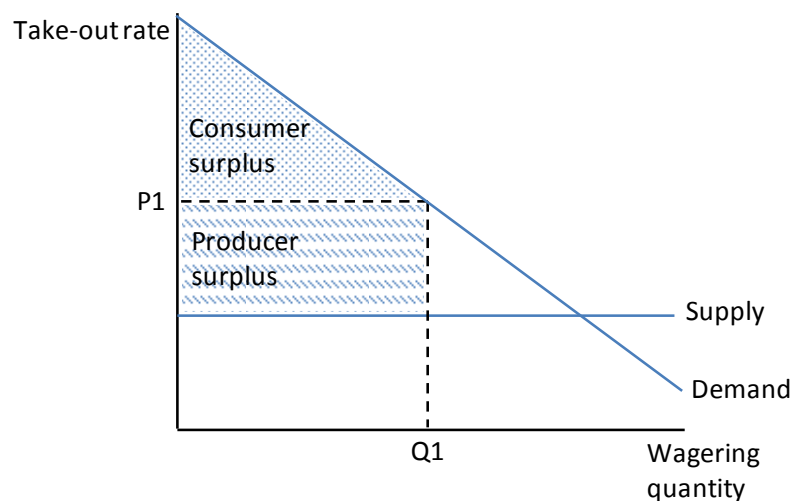
The commingling arrangement that is the subject of the authorisation application would allow New Zealand punters to bet into Tabcorp hosted pools (Australian and international racing) via the NZRB. In contrast, in the counterfactual the NZRB would offer its own pools [

]. In the factual, the NZRB's customers could access Tabcorp's deeper, more liquid pools, which offer larger and more stable dividends.[15]

[

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For a given bet type, the ability to bet into pools with larger and more stable dividends can be considered a quality improvement. That is, all else being equal, commingling would allow New Zealand punters to bet into higher quality pools. In the supply-demand framework, this can be conceptualised by an upwards shift of the demand curve: for a given betting volume, New Zealand punters would have a higher willingness to pay for a higher quality product.

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[15] See, for example, evidence presented in the NZRB's authorisation application comparing dividends in the NZRB's stand-alone pools versus those in Tabcorp's more liquid pools.

At the same time, there might also be an increase in demand arising from new customers (to the NZRB) that are now willing to purchase the higher quality product, pushing the demand curve outwards. These might be New Zealanders who either did not bet on Australian races under the counterfactual, or New Zealanders who did bet on Australian races, but did so with Tabcorp directly or with other wagering operators (e.g., corporate bookmakers). For New Zealanders, betting via a New Zealand entity rather than an Australian entity would likely have some transaction cost advantages, such as not being exposed to foreign exchange risk. As the demand curve depicted is the NZRB's residual demand, customers shifting from Tabcorp to the NZRB would also be captured by the outwards shift of the demand curve.

Figure 2 illustrates this, where the demand curve shifts out and up from D1 to D2 and the wagering quantity increases from Q1 to Q2. The benefits are given by the gains in consumer and producer surplus, with the incremental gains in consumer and producer surplus illustrated by the shaded areas. New Zealand punters would gain additional consumer surplus for the reasons already described, while the NZRB would gain extra producer surplus in the form of additional profits arising from the increase in quantities.

Figure 2
Illustration of surplus gains from quality improvement
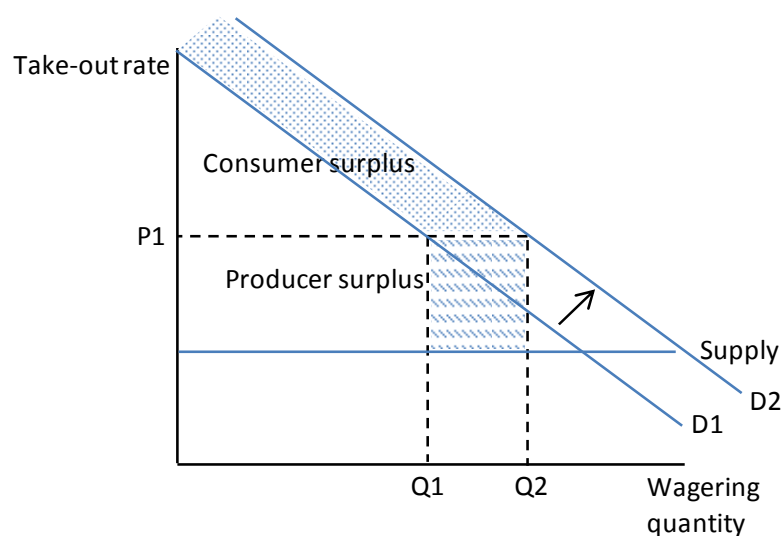
The ability for New Zealand punters to bet into the more liquid Tabcorp pools could also have a second effect: [

]

The economics literature generally finds that consumers value variety in their consumption. For example, Pindyck and Rubinfeld (2009, p.447) state that "[m]ost consumers value the ability to choose among a wide variety of competing products and brands that differ in various ways".[16] The shift in the demand curve illustrated above therefore also captures a product variety effect: for a given betting volume, New Zealand punters would have a higher willingness to pay for a wider variety of betting products.

Typically we would expect that an upwards and outwards shift of the demand curve would lead to an increase in price (all else being equal), and this would reduce the extent of the surplus gains shown in Figure 2. However, the remainder of our analysis proceeds on the basis that this will not occur. Indeed, we are advised that the expectation is the take-out rate would be lower in the factual relative to the counterfactual. We understand that with the commingling arrangement the host take-out rate applies, albeit that the guest totalisator organisation still receives this take-out rate as revenue. We understand also that Tabcorp's take-out rates (which would be levied in the factual) tend to be lower than those of the NZRB (which would be levied in the counterfactual). All else equal, the lower take-out rates that apply in the factual would result in less producer surplus to the NZRB. However, at the same time there would be an offsetting increase in consumer surplus, since New Zealand punters would face lower prices in the factual. Moreover, the lower prices may induce further behavioural change from New Zealand punters through further increases in their demand for wagering. While the net effect may therefore be that the lower take-out rate increases surplus, to be conservative we have not incorporated this effect into our analysis.

3.2. Quantification of benefits

3.2.1. Introduction

The NZRB has undertaken an analysis of how its profit would be affected if its existing commingling arrangement was to be removed. We have drawn on this analysis to assess the benefits of the proposed commingling arrangement for which authorisation is sought, within the framework set out above. We take as the factual the scenario in which the arrangement is authorised and the NZRB is able to commingle into Tabcorp pools (and vice versa), but with the various rebate restraints in place. In the counterfactual, the NZRB does not offer commingling of bets into Tabcorp pools, but rather establishes its own pools [

]. We note that the NZRB's analysis essentially quantifies the costs of no commingling (i.e., the costs of the counterfactual relative to the factual), but our analysis considers the benefits of commingling.

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[16] Robert S. Pindyck and Daniel L. Rubinfeld (2009), *Microeconomics*, Seventh Edition, Pearson Prentice Hall, New Jersey. See also Lancaster (1990), discussing in general terms the gains from increased product variety; Kelvin Lancaster (1990), "The Economics of Product Variety: A Survey", *Marketing Science*, 9(3), 189-206.

We understand that the NZRB's analysis is based on calculating its "profit contribution", i.e., its net betting revenue less "turnover related expenses". The latter include costs [

] We understand from the NZRB that [

]. Accordingly, the NZRB's calculation of its profit contribution appears to be a suitable proxy to the producer surplus concept discussed above.

We note that both the factual and the counterfactual differ from the status quo. We understand that, currently, the NZRB and Tabcorp have an interim commingling arrangement in place under which:

- The NZRB is permitted to commingle only "win" and "place" bets into Tabcorp pools without any rebate restraints; and

- Tabcorp is permitted to commingle the full suite of bet types into the NZRB's pools without any rebate restraints.

Accordingly, the NZRB's analysis assumes there would be some costs incurred (and profits lost) in transitioning from the status quo to the counterfactual scenario in which it offers its own pools [   ]. As we discuss in more detail below, these costs would not be incurred in transitioning to the factual, since commingling would remain in place.

The NZRB's analysis only assesses profit (i.e., producer surplus) impacts, whereas in our analysis below we also consider consumer surplus impacts, albeit only from a qualitative perspective. In addition, the NZRB has analysed profit impacts in two phases:

- Phase 1, which occurs [
                        ]; and

- Phase 2, which occurs on an ongoing basis after phase 1 (although the NZRB has only analysed profit impacts in this phase in a single year).

We have expanded this to assess benefits over a five-year period, and calculated the present value of the benefits using a 10% discount rate. This is consistent with the Commission's approach in previous authorisations.[17] We apply the phase 1 impacts in years one to five of our analysis (or only in year one if these phase 1 impacts are one-off impacts),[18] while the ongoing impacts in phase 2 are applied from years two to five of our analysis.

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[17] See, for example, the *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, 2015 NZCC 31, 12 November 2015, paragraph 386.

[18] [
                        ]

3.2.2. Benefits from quality improvement

As explained above, the commingling arrangement would lead to an improvement in the quality of Australian racing pools that New Zealand punters could bet into in the factual, which would lead to an upwards and outwards shift of the demand curve and an increase in consumer and producer surplus.

In section 3.1 above, we explained the various drivers of the shifting demand curve, which included both an increase in demand from new customers (to the NZRB) and a higher willingness to pay for existing customers. Note the NZRB analysis only covers new customers that switch from Tabcorp to the NZRB. In other words, the NZRB analysis ignores the effects of increased demand from the NZRB's existing customers,[19] and brand new customers betting on Australian races. Therefore the NZRB analysis will understate the producer surplus benefits of commingling.

The NZRB has estimated that the profit contribution (i.e., the increase in producer surplus) that it would obtain from these switching customers is approximately [   ].[20] We understand that this figure is calculated by estimating the customers that would have otherwise been lost by the NZRB to Tabcorp in phase 2 of the counterfactual, and evaluating their profit contribution at the factual take-out rate.

In addition, the producer surplus gain is calculated by applying the factual variable cost (i.e., the cost that includes the NZRB's commingling fees paid to Tabcorp) in both the factual and counterfactual. However, in the counterfactual, the NZRB would not commingle into Tabcorp pools, so would not pay this fee. The NZRB has separately estimated the change in the commingling fee cost of [   ] (which reduces the benefits).[21]

The annual producer surplus increase, net of the commingling fee change, gives an annual benefit of [   ], and using a 10% discount rate, this gives a five-year present value of [   ], assuming this would be a steady state distinction between the counterfactual and factual in years two to five of our analysis.

There would also be a consumer surplus benefit to these customers. Customers that switch from Tabcorp to the NZRB would be betting on Australian races in both the counterfactual and the factual, so they would receive a similar surplus in both cases. However, there must be some surplus gains to encourage these customers to switch from Tabcorp to the NZRB, and these

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[19] The NZRB analysis is also based on the status quo, where only win and place bets are commingled into Tabcorp pools. It is possible there might also be a change in demand arising from the ability to commingle *all* bet types in the factual, and this is not captured in the NZRB analysis.

[20] [
            ]

[21] [
            ]

might arise because of, for example, the transaction cost savings discussed earlier. Nonetheless, we are not aware of any evidence that would assist in quantifying the magnitude of these surplus gains, and for this reason we have not attempted to do so.

We note that there may be other effects that are not captured in this analysis. In particular, while the producer surplus gain is evaluated at the factual take-out rate, the take-out rate is in fact lower in the factual relative to the counterfactual. The lower take-out rates may induce increased betting volumes by New Zealand punters, which are not captured in this analysis.

3.2.3. Benefits from increased product variety

We can quantify the benefit from an increase in product variety by considering the extent of the shift in the demand curve. The NZRB has estimated that, with commingling, [

]. The increase in demand from the product variety effect can therefore be captured by [

].

The NZRB has estimated that the profit contribution (equivalent to the increase in producer surplus) it would obtain from [

].[22] We understand that this figure is calculated by estimating the betting volumes for wagering on [

],[23] and evaluating the profit contribution from these volumes at the factual take-out rate. Applying this figure as a steady state distinction between the counterfactual and factual in years two to five of our analysis, and converting this into present value terms gives a five-year present value of [   ].

There would also be an increase in consumer surplus associated with the increase in product variety, although we have not attempted to quantify it. In the counterfactual, there may be some New Zealand punters that would have their preferences for [

]. For these consumers, they may gain some additional consumer surplus in the factual: for the same reasons as set out above, surplus gains may come in the form of [

]. However, there may also be other New Zealand punters that [

]. For these consumers, the benefits of the commingling arrangement would include the entire consumer surplus from betting on these meetings in the factual.

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[22] [

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[23] The NZRB analysis does not consider whether these betting volumes arise from customers switching from Tabcorp to the NZRB, or otherwise.

3.2.4. Benefits from avoided costs

An additional benefit of the proposed commingling arrangement is the avoidance of costs that the NZRB might otherwise incur in the counterfactual. In previous authorisations the Commission has included avoided costs as a benefit in the factual.[24]

We understand that, absent the commingling arrangement, the NZRB would [

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The NZRB's analysis assumes that in the counterfactual (without commingling), the NZRB would [

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[

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[24] See the 2015 *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, where avoided capital expenditure was included as a benefit.

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We have captured this in the cost benefit analysis by incorporating a one-off benefit of [   ] in year one of the analysis, which reflects an avoided temporary loss of producer surplus. There would also be an avoided temporary loss of consumer surplus,[25] but we have not sought to quantify this benefit.

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[25]   [

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3.2.5. Summary of benefits

In Table 1 below we summarise the estimated value of the quantified benefits. In sum, the five-year present value of the (quantified) benefits of commingling amounts to [   ]. However, as discussed above, this figure is likely to understate the benefits as there are some benefits from additional consumer and producer surplus that we have not attempted to quantify.

Table 1
Summary of quantified benefits[26]

Benefit	Year 1	Year 2	Year 3	Year 4	Year 5	5-year NPV
[						]
[						]
[						]
[						]
[						]
[						]
[						]
Total benefit	[					]

4. Detriments

4.1. The conceptual framework for assessing detriments

As with the assessment of benefits, the Commission's framework for assessing detriments is to identify harm to economic efficiencies from reduced consumer and producer surplus. The commingling arrangements may lead to detriments due to the provisions that restrict the ability of the NZRB and Tabcorp to offer rebates to customers that are betting into commingled pools.

We understand that only a small number of high-staking customers (VIPs [   ]) are affected by the rebate restrictions because rebates are not offered to non-VIP [   ] customers. Moreover, these are large and sophisticated customers, and the VIP customers are not resident in New Zealand. To the extent that VIPs are not resident in New Zealand, there is a legal question as to whether any reduction in their consumer surplus is even relevant to the analysis under the Commerce Act.

Nevertheless, we proceed as if it is relevant, to be conservative.

In our view, it is unlikely there would be any competitive detriment arising from the rebate restrictions in respect of betting on Australian races. Under the counterfactual, the NZRB would [

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[26] Numbers shown in the table are rounded numbers, but we have based our calculations on the unrounded numbers provided to us by the NZRB.

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Under the factual, the NZRB would now be a competitor to Tabcorp on Australian races, because it could offer a similar product. But under the factual, the NZRB could not offer rebates, and would price its products at the Tabcorp take-out rate.

[

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Under the factual, VIPs could use either the NZRB or Tabcorp to bet on New Zealand races, because there would be pooling by Tabcorp into the NZRB's pools. But now, Tabcorp could not offer rebates of [   ]. The NZRB could raise prices above the counterfactual prices, but below the take-out rate, (in other words, reduce the level of rebates offered) and still gain some VIP customers from Tabcorp. So this could result in some allocative inefficiency (i.e., loss of producer and consumer surplus), as well as some productive and dynamic inefficiency.

[

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The harm to economic efficiency from a reduction in competition is analysed in three ways:

- Allocative inefficiency: in the present case VIP customers would be subject to an effective price rise from a reduction in rebates. This would lead to a reduction in output (wagering volumes) and reduced consumer and producer surplus;

- Productive inefficiency: the reduced competition for VIP customers may place less pressure on the NZRB to minimise costs, leading to reduced producer surplus; and

- Dynamic inefficiency: the reduced competition for VIP customers may place less pressure on the NZRB to invest and innovate. This can be conceptualised as an inwards shift of the demand curve, which is the reverse of scenario shown earlier in Figure 2, and would result in a reduction in consumer and producer surplus.

4.2.   Quantification of detriments

4.2.1.   Allocative efficiency

The Commission typically quantifies allocative efficiency detriments using an established technique based on a supply-demand model.[27] The model assumes a linear demand curve and uses price, volume and cost data to populate the parameters of the model, and this allows an estimate of the loss in consumer and producer surplus arising from an increase in price.

In the present case, the supply-demand relationship for the detriments is slightly different to that we set out above for the benefits. The benefits only arise in respect of New Zealand punters betting on Australian racing via the NZRB,[28] because there is an increase in the quality and variety of this wagering service with commingling [

]. However, the detriments arise in respect of betting by VIPs on New Zealand racing via both the NZRB and Tabcorp, since this is where the rebate restraints apply.

In order to quantify these allocative efficiency detriments using the supply-demand model, we have used the following inputs:

- The counterfactual betting turnover (i.e., betting volumes, measured in dollars) of VIP punters betting on New Zealand races in the counterfactual. For this the NZRB has provided us with data from its most recent financial year (FY2015) of betting turnover for VIP customers. While this uses 2015 data (i.e., the status quo), we have assumed that this is a valid proxy for the counterfactual.

  – Since the allocative efficiency detriment affects VIP customers betting through both the NZRB and Tabcorp, we would ideally also have data on VIP betting volumes (on New Zealand races) through Tabcorp. Unfortunately we were not able to obtain this data.

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[27]   See, for example, the Commission's analysis in the 2015 *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation.

[28]   Although, as noted earlier, in some cases this can have an indirect effect on betting on New Zealand racing via the NZRB, where customers that shift to the NZRB to bet on Australian racing also shift their betting on New Zealand racing.

However, the NZRB has advised that a reasonably proxy would be to assume that VIP betting volumes with Tabcorp are approximately [   ] times the volumes with the NZRB. Accordingly, we have used this relationship to estimate Tabcorp betting volumes in the counterfactual;

– We note also that this assumes that the VIP customers who are affected by the rebate restraints are New Zealanders, such that any reduction in their consumer surplus is relevant to the analysis. The validity of this assumption is arguable, particularly given that none of the NZRB's current VIP customers are resident in New Zealand. Nonetheless, to be conservative, we continue to include betting volumes from VIP customers in our analysis;

■ The average take-out rate charged to VIP punters for betting on New Zealand races in the counterfactual (i.e., the take-out rate net of rebates). For this the NZRB has provided us with FY2015 data of net betting revenue (i.e., betting revenue net of rebates, GST, duties and levies) and betting turnover for VIP customers. We have calculated the counterfactual take-out rate by determining net betting revenue as a percentage of betting turnover. We have assumed that this take-out rate is also representative of the take-out rate charged to VIPs betting on New Zealand races through Tabcorp; and

■ The NZRB's variable cost of providing wagering services to VIP punters betting on New Zealand races in the counterfactual. For this the NZRB has provided us with FY2015 data on turnover related expenses for VIP punters, that, as noted above, we are advised best reflect the costs that vary with changes in volume (turnover). We have calculated the counterfactual variable cost by determining turnover related expenses as a percentage of betting turnover. We have assumed that the NZRB's variable cost is also representative of Tabcorp's variable cost of providing wagering services to VIP punters betting on New Zealand races in the counterfactual.

The model also uses as an input the elasticity of demand for betting by VIP punters on New Zealand pari-mutuel racing. While we do not have an exact estimate of elasticity for this particular customer group, the economics literature does have some estimates for the elasticity of demand for pari-mutuel wagering more generally:

■ Suits (1979) finds demand elasticities for pari-mutuel thoroughbred racing in the US, using data from 1949-1971, in the range of -1.59 to -2.14;[29]

■ Gruen (1976) uses data on pari-mutuel racing in New York City from 1940-1969, and finds a demand elasticity of -1.57;[30]

■ Pescatrice (1980) estimates demand elasticities in the range of -0.46 to -1.07, using 1941-1975 data from Louisiana and 1944-1975 data from New York City racetracks;[31]

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[29] Suits (1979), *op cit.*

[30] Arthur Gruen (1976), "An Inquiry into the Economics of Race-Track Gambling", *Journal of Political Economy*, 84(1), 169-177.

- Morgan and Vasche (1982) analyse data on pari-mutuel thoroughbred racing in California from 1958 to 1980 to find a demand elasticity of -1.3;[32] and

- Thalheimer and Ali (1995) use data on pari-mutuel racing in Ohio from 1960-1987 and find demand elasticities ranging from -2.85 to -3.09.[33]

These studies are all relatively old and utilise US data. In a more recent study using New Zealand data (from 1993 to 2009), Feess and Schumacher (2013) note that elasticities are "considerably affected by the institutional framework" and the racing tax system in the US might explain the (generally) persistent elasticity results well above one (in magnitude).[34] These authors estimate a demand elasticity for pari-mutuel racing in New Zealand of -0.33.

The NZRB has also provided us with its own analysis of the demand for pari-mutuel wagering in New Zealand.[35] While it has not undertaken an econometric analysis of demand that controls for relevant factors that influence wagering volumes (which all of the above mentioned studies do), using some simple event study examples of price and volume changes [

].

Our suspicion is that [

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[31]   Pescatrice (1980), *op cit.*

[32]   W. Douglas Morgan and Jon David Vasche (1982), "A note on the elasticity of demand for wagering", *Applied Economics*, 14, 469-474.

[33]   Richard Thalheimer and Mukhtar M. Ali (1995), "The Demand for Parimutuel Horse Race Wagering and Attendance", *Management Science*, 41(1), 129-143.

[34]   E. Feess and C. R. Schumacher (2013), "The elasticity of demand for wagering in an unregulated market", *Applied Economics*, 45, 2083-2090.

[35]   [   ].

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Table 2
Allocative efficiency detriments ($ per annum)

[	]
[	]
[	]

We noted above that the NZRB's current VIP customers are not resident in New Zealand (and Tabcorp's VIP customers are also not resident in New Zealand), and as such there is a question as to whether any reduction in their consumer surplus is relevant to the analysis under the Commerce Act. If we were to assume that any detriment to consumer surplus was not relevant, we could re-calculate the above detriment figures by only taking account of the loss of producer surplus (to both the NZRB and Tabcorp). [

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Table 3
Allocative efficiency detriments to producers plus producer surplus transfer ($ per annum)

[	]
[	]
[	]

4.2.2. Productive efficiency

In previous authorisations the Commission has quantified productive efficiency detriments by applying a percentage factor to the dollar value of counterfactual variable costs. The percentage factors used have included ranges of 0% to 1% in its recent (second) decision regarding the wool

scouring merger,[36] and 1% to 5% in its first decision regarding the wool scouring merger[37] and the Air New Zealand/Qantas authorisation.[38]

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] Indeed, we note that a recent report by the Offshore Racing and Sports Betting Working Group highlights in general the competitive pressure provided by offshore corporate bookmakers.[39] The report shows that betting by New Zealanders with offshore corporate bookmakers has been increasing at a rate of 15% per annum from 2010-2015,[40] and this has placed "pressure on products, services and pricing" for the NZRB's betting products.[41]

Table 4
Productive efficiency detriments ($ per annum and present value)

[	]
[	]
[	]

4.2.3. Dynamic efficiency

In a similar manner to productive efficiency, in previous authorisations the Commission has quantified dynamic efficiency detriments by applying a percentage factor, although in this case to the dollar value of counterfactual revenue. The percentage factors used have included ranges

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[36] *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, 2015 NZCC 31, 12 November 2015.

[37] *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, Decision No. 725, 9 June 2011.

[38] *Air New Zealand/Qantas* merger authorisation, 23 October 2003.

[39] Offshore Racing and Sports Betting Working Group, Final Report, October 2015.

[40] *Ibid*., at paragraph 73.

[41] *Ibid*., at paragraph 57.

of 0% to 0.5% in its second decision regarding the wool scouring merger,[42] and 0% to 1% in its first decision regarding the wool scouring merger[43] and the Air New Zealand/Qantas authorisation.[44]

[

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Table 5
Dynamic efficiency detriments ($ per annum and present value)

[	]
[	]
[	]

5. Summary of benefits and detriments

In Table 6 we bring together the benefits and detriments, to obtain the net benefits of the commingling arrangement, analysed in present value terms over a five-year timeframe. The total benefits, of [   ], exceed the detriments, considering either the top or bottom of the range (where we have used the results from Table 2 for the detriments range shown, which capture both consumer and producer surplus detriments).

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[42]   *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, 2015 NZCC 31, 12 November 2015.

[43]   *Cavalier Wool Holdings/New Zealand Wool Services International* merger authorisation, Decision No. 725, 9 June 2011.

[44]   *Air New Zealand/Qantas* merger authorisation, 23 October 2003.

Table 6
Benefits and detriments of the commingling arrangement

Benefit/detriment	Five-year net present value	
<u>Benefits</u>		]
[		]
[		]
[		]
[		]
[		]
[		]
[		]
Total benefits	[	]
<u>Detriments</u>		
[		]
[		]
[		]
Total detriments	[	]