



# **CWH/NZWSI – Response to the Commission’s email concerning price constraints**

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## 1. Introduction

Regarding the proposed merger of CWH and NZWSI, the Commerce Commission has requested (by way of email dated 30 June 2015) information concerning price constraints. In particular, the Commission has sought:

*any additional data we could obtain, or analysis that we could undertake, that would either alter or support our preliminary view on the competitive constraint provided by threat of increased greasy exports that the merged entity would face if the transaction is authorised*

In addition, regarding the constraint from greasy exports, the Commission states in its email that “we have not been able to determine the likely magnitude of the effect that these factors would have in practice”.

In this report we respond to the Commission’s request, and provide some analysis of the competitive constraint provided by exports of greasy wool to overseas scours.

## 2. Analysis of the constraint from exports of greasy wool

The Commission’s email seeks any data or analysis demonstrating the constraint from the threat of increased exports of greasy wool. We have already provided the Commission with data that demonstrates this constraint: as shown in our 21 April 2015 report,<sup>1</sup> at the same time as CWH’s real prices [REDACTED], Chinese scourers have been increasing their share of the wool clip. We analyse the relevant data further in section 4 of this report.

While the Commission seeks evidence on the extent to which this constraint will bind if the proposed transaction is authorised, the evidence suggests that the constraint from overseas (particularly Chinese) scours *already* binds:

- 24% of the wool clip goes to China greasy,<sup>2</sup> a share that has been increasing (in other words, overseas scours are already “in the market”); and
- CWH has been [REDACTED] its real prices, while still losing share of the wool clip.

If anything, this constraint looks like it is tightening:

- “an increased proportion (over a third) of the wool currently scoured in New Zealand is destined for China” (paragraph 278 of draft determination), leading the Commission to drop its -0.05 elasticity assumption;

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<sup>1</sup> “CWH/WSI merger – review of draft determination”, 21 April 2015.

<sup>2</sup> Data is for the year ended June 2014, calculated as greasy China exports of 38,858,000kg out of a total wool clip of 164,102,000kg (source: Beef + Lamb New Zealand data).

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- The “quantity and quality of the available scouring capacity in [Asia and China in particular] has increased” (paragraph 253 of the draft determination); and
- Compass Wool Processors has established a scour in Malaysia, and is marketing its services in New Zealand.

It is true that growers face few alternatives to selling their wool to merchants, but within the set of merchants, growers do have the option of selling to merchants that export greasy.<sup>3</sup> Therefore merchants facing a price increase from the scour will have an incentive to respond, e.g., by investigating exporting greasy. As we noted in the discussion at section 3 of the 21 April 2015 NERA report:

- Merchants attempting to pay less to growers to account for the higher domestic scouring charge would be at a competitive disadvantage to those merchants intending to export greasy; and
- It is not clear to us why there would be any constraints on the ability of merchants intending to scour overseas to increase the quantities they purchase, given that there is a global market for wool products, and available capacity in overseas scours.

It is difficult to reconcile the proposition that merchants are relatively indifferent to scour price increases with the evidence that CWH has [REDACTED] its real prices since 2006/07, despite industry rationalisation occurring across this time.

### **3. Professor Guthrie's critique of our real price analysis**

We note that Professor Guthrie has made two critiques of our real price analysis, in his 23 June 2015 report.<sup>4</sup>

Professor Guthrie's first critique is that CWH's costs may have fallen over the time period we analyse (which was 2007-2014). CWH has provided us with data on how its costs in some of its key cost categories have moved in recent years. Together the cost categories analysed make up [REDACTED]% of CWH's total variable costs.<sup>5</sup> CWH analysed nine particular cost categories, all of which sit within the top 11 variable cost categories (based on proportion of total variable costs). Across six of these nine categories costs have [REDACTED] (typically over the 2007-2013 period, but in some cases data were only available over a slightly shorter period), as shown in Table 1. This is in contrast to Professor Guthrie's contention that costs for many inputs to

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<sup>3</sup> Growers also own marketing and wool export companies – Wools of New Zealand and Merino New Zealand. In addition, the grower-owned co-operative Primary Wool Co-operative has a 50% shareholding in the joint venture Elders Primary Wool, a wool export marketing company (see [http://primarywool.co.nz/capturing\\_value/epw/](http://primarywool.co.nz/capturing_value/epw/) and <http://www.eldersprimary.co.nz/>).

<sup>4</sup> Graeme Guthrie (2015) “Comment on allocative efficiency losses and response to Direct Capital”, June 23.

<sup>5</sup> Based on data from CWH's 2013 statutory financial accounts, and where we have assessed variable costs using the same approach set out in our 22 October 2014 report (with the exception that we have not netted off lanolin revenue in this instance).

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scouring have fallen over the period. Professor Guthrie singles out in particular costs for gas, detergent, bleach, HD wrappers and bands – [REDACTED].

**Table 1**  
**[REDACTED]**

This data also addresses the proposition that Reuben Irvine raised during our 2 July 2015 meeting, i.e., that the [REDACTED] caused by competition between CWH and WSI. This proposition is not supported by the data.

Professor Guthrie's second critique is that even if CWH's [REDACTED], the Commission cannot infer that this is evidence of pressure from overseas scours. Professor Guthrie uses the example of a Bertrand model, arguing that under this model firms will set price at the "perfectly competitive level", and accordingly mergers will not raise price until the point of monopoly is reached.

The problem with this argument is that the Bertrand model Professor Guthrie refers to is conceptual only and is not realistic – indeed, its odd results are referred to in the literature as the "Bertrand paradox".<sup>6</sup> Tirole (1988, pp.210-211) states that this is because "it is hard to believe that firms in industries with few firms will never succeed in manipulating the market price to make profits".<sup>7</sup>

The model assumes that each firm can produce as much as it wants at constant marginal cost, and that price equals marginal cost. The model is clearly not applicable in the present case where there are investments in fixed assets that will have capacity limits, and where pricing at marginal cost would not be sustainable. Indeed the Bertrand model that Professor Guthrie refers to is not really applicable in the real world. It would imply that rationalisations (other than two-to-one) would never lead to a price increase. However, the standard concern in competition practice is that a merger could lead to higher prices (or lower quality) – this is of course why section 47 of the Commerce Act exists.

So Professor Guthrie is picking a very unusual and unrealistic model to make his argument. The fact remains that across a period of mergers, CWH's real prices [REDACTED]. So we naturally seek to understand why. As mentioned by James Mellsop at the conference,<sup>8</sup> we are not disputing that NZWSI would provide some constraint under the counterfactual (although as portended at the conference, and as we explain in the next section, this constraint appears

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<sup>6</sup> See, e.g., Jean Tirole (1988), *The Theory of Industrial Organization*, MIT Press, Cambridge, Mass. pages 209-212. The model that Professor Guthrie refers to is distinct to the differentiated Bertrand model, which is used on occasions in antitrust analysis, and which predicts prices above marginal cost.

<sup>7</sup> *Ibid.*

<sup>8</sup> See page 7 of the confidential session transcript.

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limited). But our point is that there are other constraints, which are very powerful, being the declining wool clip and overseas scours, and that these are binding *now*. In our view, the Commission can clearly draw an inference that these forces would constrain the merged entity.

#### 4. The constraint from NZWSI

In addition to the evidence discussed above regarding the constraint from overseas scours, the evidence suggests that NZWSI is currently not a material constraint on CWH.

We have obtained data from NZWSI, being its total volumes and share of scouring volumes that relate to commission scouring in each of the North and South Islands,<sup>9</sup> along with CWH's volumes (which all relate to commission scouring). We have also obtained data (from Beef + Lamb New Zealand) on total greasy exports to China and the rest of the world. From this data we have calculated CWH and NZWSI's share of commission scouring (i.e., NZWSI's own scouring volumes are excluded from this analysis), along with the share of greasy exports to China and elsewhere.<sup>10</sup> The results of this (national) analysis are shown in Table 2.

**Table 2**  
**Shares of commission scouring and greasy exports, years ended June**

	2011	2012	2013	2014
CWH	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
NZWSI				
China greasy exports				
Rest of world greasy exports				

The results suggest that NZWSI only has a small share of commission scouring, at approximately [REDACTED]% (nationally) in the year ended June 2014.<sup>11</sup> This share has

<sup>9</sup> The NZWSI data we were provided with reported the share of its scouring volumes that was commission scouring for years ended May. For consistency with the remaining data (which is for years ended June), we have applied these shares to NZWSI's June year end volume data. This is unlikely to have a material influence on the results. For example, NZWSI's share of its scouring volumes that is commission scouring in the year ended May 2014 is [REDACTED]% in the North Island and [REDACTED]% in the South Island, which are similar to the figures reported by the Commission in the draft determination (paragraph 125) for the year ended June 2014, of [REDACTED]% and [REDACTED]% for the North Island and South Island respectively.

<sup>10</sup> This is on the basis that the wool clip either goes to one of CWH or WSI for scouring, or overseas greasy. We have excluded exports of slipe from our analysis.

<sup>11</sup> In the draft determination (at paragraph 124), the Commission reported NZWSI's shares of total (i.e., CWH plus NZWSI) commission wool scouring of [REDACTED]% and [REDACTED]% in the North Island and South Island respectively, for the year ended June 2014. The [REDACTED]% share reported here takes account of exports of greasy wool, which the Commission's figures do not, and it is also a national level figure. If we exclude greasy exports and calculate NZWSI's share of total commission scouring in each island, we obtain similar figures to those obtained by the Commission.

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[REDACTED] from 2011 to 2014. CWH's share has been [REDACTED] over this period, with the share of greasy exports to China increasing, despite CWH's [REDACTED]. This evidence suggests that the constraint on CWH comes predominately from greasy exports to China, and that the constraint from NZWSI is minimal.

## 5. The Cournot model

The Commission's email states that it has not yet been able to determine the likely magnitude of the effects arising from the constraint from greasy exports.

One indication of the magnitude of these effects is given by the results of the Cournot merger simulation model that we presented in our 21 April 2015 report (see section 2.4.2 of that report). As we discussed there, we applied a Cournot model to each of the North and South Islands, assuming that, in the pre-merger Cournot equilibrium, there are three firms, being CWH, NZWSI and one "overseas" firm which represents all overseas (primarily Chinese) scours. In the post-merger Cournot equilibrium, the number of firms is reduced to the merged entity and the overseas firm. The results of that simulation model were a post-merger price increase of [REDACTED]% in the North Island and [REDACTED]% in the South Island.

In our 21 April 2015 report we also reported a sensitivity test to the Cournot model where we assumed two equal sized "overseas" competitors are present in the market, and we found that the percentage price increase falls to [REDACTED] percent in the North Island and [REDACTED] percent in the South Island.

We have now undertaken two further sensitivity tests to the Cournot model.<sup>12</sup> The first of these relates to the pre-merger marginal cost for CWH used to calibrate the model. In the Cournot results reported in our 21 April 2015 report, we calibrated the model using a pre-merger marginal cost based on the combined variable costs of CWH and NZWSI, which was consistent with the pre-merger variable costs used in our allocative inefficiency calculations in our 22 October 2014 report.<sup>13</sup> As an alternative, we have calculated a pre-merger variable cost for CWH only,<sup>14</sup> and used this to calibrate CWH's marginal cost in the Cournot model. The results of this simulation (assuming only one "overseas" firm, as in the base case) are a post-merger price increase of [REDACTED]% in the North Island and [REDACTED]% in the South Island.

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<sup>12</sup> We have also updated the volume data in the Cournot model, to use data provided by NZWSI with volumes for itself and CWH. This improves the accuracy of the volume data (which was previously rounded to the nearest thousand kgs but is now unrounded data) but does not result in any material changes to the model results.

<sup>13</sup> The pre-merger variable costs used in our allocative inefficiency calculations in our 22 October 2014 report were the correct variable costs to use in that case, as the allocative inefficiency was calculated across the combined volumes of both CWH and NZWSI.

<sup>14</sup> We have assessed variable costs using the same approach set out in our 22 October 2014 report. The resulting variable cost for CWH only is \$[REDACTED] in the North Island (compared with \$[REDACTED] for the combined CWH/NZWSI) and \$[REDACTED] in the South Island (compared with \$[REDACTED] for the combined CWH/NZWSI).



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The result suggests that, all else being equal, higher marginal costs for CWH in the Cournot model results in a lower post-merger price increase (and vice versa). The intuition for this is that a higher marginal cost in the Cournot model results in a higher (in absolute terms) market elasticity, which results in a relatively smaller increase in price.

The second sensitivity test is to calibrate the model using market shares based on NZWSI's commission scouring volumes only, which as set out above results in only a small share for NZWSI. The results of this simulation (where we have reverted to the combined variable costs of CWH and NZWSI and a single "overseas" firm, as in the base case) are post-merger price *decreases* of [REDACTED]% in the North Island and [REDACTED]% in the South Island. The decrease in price is a result of the reduction in variable costs that are expected as a result of the merger.<sup>15</sup>

The results indicate that, post-merger, the constraint imposed on the merged entity from the threat of greasy exports to overseas scours will limit the merged entity to, at most, post-merger percentage price increases of [REDACTED]% and [REDACTED]% in the North and South Islands respectively. In fact, these price increases could be viewed as an upper bound on the constraint imposed from greasy exports, because:

- Our simulation model assumes a single overseas entity rather than many, and one feature of the Cournot model is that prices are (in the general case) inversely related to the number of competitors, as the sensitivity test reported above with two overseas firms demonstrates;
- Applying the Cournot model with only NZWSI's commission scouring volumes results in price decreases, resulting from the expected merger efficiencies; and
- As discussed above, the evidence is that CWH has [REDACTED] in its prices in recent years, despite recent merger activity, which we consider can be largely attributed to the constraints from the declining wool clip and overseas scours.

At the conference, Professor Guthrie made two critiques of the use of the Cournot model:<sup>16</sup>

- That such models make a lot of unrealistic assumptions; and
- That one of the "predictions" of the Cournot model is that there is no excess capacity, which is at odds with the substantial excess capacity that is seen in the wool scouring market.

We agree that the Cournot model can make unrealistic assumptions<sup>17</sup> – indeed, such a model is a simplified version of reality, and it is inherent in all economic modelling that there will be some

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<sup>15</sup> Absent any variable cost reduction, but running the same sensitivity test using only NZWSI's commission scouring volumes, the post-merger price increases are [REDACTED]% in the North Island and [REDACTED]% in the South Island. The intuition is that, even though CWH has a larger share of the commission-only scouring market, it is merging with NZWSI that has a much smaller market share, so the price impact of the merger (absent variable cost reductions) is muted.

<sup>16</sup> See pages 70-72 of the conference transcript.

<sup>17</sup> At the conference, James Mellsoop referred to the Cournot model "warts and all" and noted that there were limitations and caveats that go with modelling Cournot behavior (page 69 of the conference transcript).

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simplifying (and not necessarily realistic) assumptions.<sup>18</sup> Indeed, Professor Guthrie acknowledged at the conference that “[e]verything that we’re producing somewhere along the lines will have assumptions that really don’t stack up”.<sup>19</sup>

Regarding Professor Guthrie’s second critique, rather than being one of the “predictions” of a Cournot model, in our view it is an *assumption* of the model that firms set capacities and produce sufficient output so as to eliminate any excess capacities. We agree that this is not necessarily a realistic assumption for the wool scouring industry. Nonetheless, as noted in our 21 April 2015 report, there are other features of the wool scouring industry that do make it more applicable to the current situation than the alternative Bertrand merger simulation model.

In this regard, we note the comments of Werden and Froeb (2008), who state that a merger simulation model:<sup>20</sup>

*must reflect critical features of a competitive landscape, such as whether the product is homogeneous or highly differentiated. But it does not mean that the model must capture every institutional detail of every industry. Models are useful analytical tools because they abstract from the minutiae of real-world complexity. Elaborate attempts to incorporate industry details cause models to lose their value in merger analysis; calibration likely becomes infeasible with available information, and there may no longer be any clear predictions.*

In sum, we recognise the limitations of the Cournot model. Nonetheless, it does have informative value in the present situation, as one of several pieces of evidence (as described in this report) suggesting that a 20% post-merger price increase is not plausible, because of the constraint from greasy exports and the relatively weak constraint from NZWSI.

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<sup>18</sup> See, for example, Werden and Froeb (2011) who state “The fact that a model paints a simplistic picture of competition is not a sufficient basis for rejecting it, as that is inherent in all economic modeling” (Gregory J. Werden and Luke M. Froeb (2011), “Choosing Among Tools for Assessing Unilateral Merger Effects”, *European Competition Journal*, 7(2), 155-178).

<sup>19</sup> Page 70 of the conference transcript.

<sup>20</sup> Gregory J. Werden and Luke M. Froeb (2008), “Unilateral Competitive Effects of Horizontal Mergers”, in Paulo Buccirossi (ed), *Handbook of Antitrust Economics*, MIT Press, Cambridge, Mass., at pp.70-71

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