

Futures Consultants Ltd

**Cavalier Wool Holdings Limited's
Authorisation Application
February 2011**

**Report to
New Zealand Wool Services International Ltd**

7 March 2011

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INTRODUCTION

1. On the 8th February 2011 Cavalier Wool Holdings Limited (CWH) made an application to the Commerce Commission (the Commission) for an authorisation to give effect to a transaction that would involve CWH, or an interconnected body corporate, acquiring control over New Zealand Wool Services International Limited's (NZWSI) wool scouring business.
2. CWH and NZWSI are currently the only two wool scourers operating in New Zealand. CWH has scouring plants at Clive (near Hastings), Awatoto (near Napier) and Timaru. NZWSI operates wool scours at Whakatu in the Hawkes Bay and at Kaputone (Belfast) near Christchurch. If the transaction should proceed, CWH would mothball its Clive plant and incorporate the equipment in NZWSI's scours at Whakatu and Kaputone into its scours at Awatoto and Timaru, respectively. CWH would then sell the Whakatu and Kaputone sites. The result would be a reduction in the number of wool scourers in New Zealand from two to one and a reduction in the number of active wool scour sites from three in the North Island and two in the South Island to one in each island.
3. Under Section 67 of the Commerce Act 1986 (the Act), the Commission is required to grant an authorisation for a proposed transaction if it is satisfied that the acquisition either:
 - will not have, or would not be likely to have, the effect of substantially lessening competition in a market; or
 - will result in such a benefit to the public that it should be permitted.

If the Commission is not satisfied either of these two conditions will be met it is required to decline to grant an authorisation.

4. CWH's application states that "there would be limited competitive detriment"¹ from the transaction, even if the counterfactual was the status quo, which it assumes to be the case. However, CWH recognises that the Commission is likely to have concerns about a transaction that will create a New Zealand monopoly, and so engaged NERA Economic Consulting (NERA) to undertake a cost benefit analysis of the proposed transaction. It instructed NERA to use approaches to assessing costs and benefits adopted by the Commission in previous authorisation decisions.

¹ Cavalier Wool Holdings Limited, Authorisation Application, 8 February 2011, Executive Summary. Hereinafter CWH, Authorisation Application.

5. CWH reports that according to NERA's analysis, the present value of the net benefits from the transaction over a five year period at a 10% discount rate would be at least \$8.04 million above those of the counterfactual.² NERA assumes the counterfactual is the status quo. By this it appears to mean the continuation of NZWSI in its current form, with new equity shareholders replacing those currently seeking to exit, but without any change in business strategy as regards also supplying wool merchant services in both islands. On the basis of NERA's analysis, CWH states in its application "that the proposed acquisition will result in such a benefit to the public that it should be authorised."³
6. I have been engaged by NZWSI to carry out an independent review of the application and of the NERA report, to ensure that the relevant issues have been identified and to assist NZWSI in identifying and providing relevant information to the Commerce Commission. I have obtained some additional information from WSI, which is incorporated in my report (and is identified below). The recent earthquake in Christchurch has limited the ability of NZWSI to provide me with additional data. I have also identified other information that the Commission will need to obtain from NZWSI or other industry participants in order to carry out a more complete and in-depth analysis of the relevant issues.
7. My instructions are to undertake the review as an independent observer drawing on my expertise as an economist and my other relevant experience. I have a BCA in Economics and BA with first class honours and PhD in Economic History. I have spent nearly 40 years applying economics to a very wide range of real world problems, including 5 years as the Chief Executive of the New Zealand Institute of Economic Research.
8. My other experiences relevant to preparing this report include:
 - a period of four years in the mid-1980s as an executive of a wool exporter, John Marshall & Co Limited. At the time I was an employee this firm was a significant investor in a wool scour; and
 - periods aggregating to 16 years as chair of AgResearch, Sastek and Celentis and as deputy chair of HortResearch and GNS. These businesses were all heavily involved in the commercialisation of agricultural scientific research.

² CWH, Authorisation Application, Executive Summary.

³ CWH, Authorisation Application, Executive Summary.

9. The main characteristics of the wool scouring industry in New Zealand are described in Part 2 of CWH's authorisation application.⁴ Information about recent trends in the volume of wool scoured and the market structure are reported in Section 5 of Part 1 of the same document.⁵ I believe these descriptions to be broadly accurate.
10. For the purposes of preparing my report I have also been provided with additional information by NZWSI relating to:
- the typical levels of charges and gross margins in wool scouring in New Zealand;
 - monthly data of the capacity utilisation of its scours from January 2007 until January 2011;
 - the market values of the land and buildings at NZWSI scours;
 - the capital costs likely to be faced by a new entrant to establish a 3 metre scour; and
 - a scientific evaluation of claims by CWH relating to techniques it has developed to improve the brightness and value of wool.
11. The information that I have estimated myself without either confirmation from the CWH authorisation application and NERA report or data from NZWSI is the level of redundancies and redundancy payments in the event of the proposed transaction proceeding. None of my estimates has a material impact on the conclusions to be drawn from my analysis but the Commission should pay particular attention to checking my assumptions in relation to these matters.

LIMITED COMPETITIVE DETRIMENT?

12. The principal reason CWH concludes that establishing a monopoly scourer in New Zealand will have "limited competitive detriment" is that, in its opinion, the current competitive constraints on CWH will continue largely unchanged. According to CWH, "the primary constraints on [it] have been permanent reductions in the wool clip and the increasing constraint imposed by Chinese wool scourers"⁶ along with the ability of merchants acting alone, or in combination, to either enter the wool scouring market themselves or sponsor new entry.
13. In 2009 the Commission issued Decision No. 666. This gave clearance for a transaction involving a merger in the wool scouring industry because, in the opinion of the

⁴ CWH, Authorisation Application, pp. 13-16.

⁵ CWH, Authorisation Application, pp. 6-9.

⁶ CWH, Authorisation Application, Executive Summary.

Commission, the reduction in the number of participants at that time from three to two was not likely to result in a substantial lessening of competition in any of the markets it identified. These included North and South Island markets for the supply of wool scouring services and a national market for the purchase and supply of wool grease.

14. The analysis supporting Commission Decision No. 666 provides a very useful means to check CWH's conclusion that its proposed acquisition would have "limited competitive detriment". This is because the proposed transaction did take place quite recently. It is reasonable, therefore, to assume as a starting point that the nature and structure of the markets for wool scouring in New Zealand are as the Commission assumed they would be in the factual case of its analysis supporting the granting of this clearance. Moreover, CWH and NERA have both drawn heavily upon Commission Decision No. 666 in developing their views and analyses, including adopting the Commission's definitions of markets. I concur with the CWH and NERA decisions to adopt the Commission's definitions of markets.
15. The question is, does the analysis supporting Commission Decision No. 666 support CWH's conclusion that its proposed acquisition of NZWSI's scouring activities would have "limited competitive detriment"?

The national market for wool grease

16. The Commission devoted very little of its attention in Decision No. 666 to the national wool grease market. It noted that Lanolin Trading Co Limited (Lanolin Trading) is an industry wide co-operative which acts as the agent for its shareholders – currently all New Zealand wool scourers – in the purchase and marketing of wool grease, a by-product of wools scouring. The company mainly exports its product. There is, therefore, already a single buyer in New Zealand of this product.⁷
17. The Commission in Decision No. 666 recognised that changes in control of Lanolin Trading resulting from mergers of wool scourers could adversely effect competition in the national market for wool grease by enabling an entity with control to either:
- discriminate as to the sale price of wool grease so that it receives a higher price than its competitors; or
 - prevent new wool scouring entrants from joining Lanolin Trading.⁸

⁷ Commerce Commission, Decision No. 666, p.8

⁸ Commerce Commission, Decision No. 666, p.13.

18. The Commission, however, noted that for the payments that wool scourers receive for the wool grease supplied by them a pooling system operates and this effectively removes the scope for price discrimination among suppliers. The Commission further noted that Lanolin Trading “as a co-operative is incentivised to attract wool grease supply from all New Zealand wool scours in order to maximise its bargaining power with its primarily overseas customers”.⁹
19. Under the factual in the current application for authorisation, the number of shareholders of Lanolin Trading will go from two to one and it can no longer be considered a co-operative. It would be open to CWH as the sole remaining shareholder to block new shareholders entering the company and change the constitution of the company and remove the pooling system and introduce price discrimination. .
20. The sole shareholder would be constrained in the extent it pursued this course of action and introduced price discrimination, however. This is because of the low barriers to entry to the wool grease market facing any new wool scourer and the effect the establishment of an alternative supplier would have in undermining the advantages of Lanolin Trading as a single desk seller in its negotiations with overseas purchasers. For these reasons, I am of the opinion that a reduction from two to one in the shareholding of Lanolin Trading will not, or would not be likely to have, the effect of substantially lessening competition in the national market for wool grease. I agree with CWH and NERA that the national market for wool grease requires limited analysis in considering the authorisation application.

North and South Island scouring markets

21. In Decision No. 666, the Commission took the view that the competition issues in respect of the supply of wool scouring services are generic to both the North and South island geographic markets. As a result, the Commission treated them together for competition analysis.¹⁰ I agree with this approach.
22. The Commission systematically considered the following factors as part of its competition analysis of the two scouring markets:
- the constraint from NZWSI;
 - the constraint from potential entry;

⁹ Commerce Commission, Decision No. 666, pp.13-4. The Commission's other claim that any new wool scour operator is eligible to join Lanolin Trading subject to paying \$50 per scour that it owns is not unequivocally provided for in the Lanolin Trading's constitution. The Directors control the right of any new entrant to enter.

¹⁰ Commerce Commission, Decision No. 666, p.14.

- the potential constraint from offshore scouring, particularly in China;
- the countervailing power of wool merchants; and
- the presence of excess capacity and economies of scale.

23. I agree these are the appropriate factors to consider, along with the ability of parties to coordinate their activities.

Constraint from NZWSI

24. In relation to the constraint from NZWSI, the Commission noted in Decision No. 666 that although this firm presently had a limited involvement in commission scouring, it was incentivised to develop this business to improve profitability. The Commission also noted that installation of some new equipment to be obtained from the transaction under consideration in Decision No. 666 would enhance NZWSI's ability to undertake commission scouring and that the terms of an agreement it has with CWH that underwrites its scouring activities to some degree also incentivises it to seek commission scouring. Overall, the Commission concluded that "NZWSI is likely to provide some degree of competitive constraint "on CWH."¹¹

25. Implicit in the Commission's reasoning on this element of competition is a view that NZWSI acts as a constraint on other wool scourers only to the extent it undertakes scouring for other parties on commission. In other words, the Commission assumes that NZWSI's main activity of buying greasy wool on its own account, scouring it in its own scours and selling scoured wool to other parties does not act as a competitive constraint on other participants in the "North and South Island markets for the supply of wool scouring services."

26. In my opinion, this perspective is incorrect and significantly under estimates the competitive constraint on CWH currently provided by NZWSI.

27. There are two principal means by which wool scouring services are provided to those requiring them. One is on a commission basis under which the scouring services are bought by the owner of the greasy wool through payment of a fee or commission to the scourer. The other is on a vertically integrated basis under which the scouring services are bought from the scourer as part of the purchase of scoured wool.

28. CWH operates mainly on a commission basis and NZWSI operates mainly on the vertically integrated basis. Those supplying wool scouring services on both bases are in

¹¹ Commerce Commission, Decision No. 666, pp.18-21.

competition with one another. The relevant markets are, as the Commission identified in Decision No. 666, markets for wool scouring services not markets for scouring wool on commission. To see why NZWSI non-commission scouring activities compete with CWH's commission scouring activities assume NZWSI developed a significantly more efficient means of scouring than CWH. This would allow it to offer scoured wool at a lower cost than a party could buy the greasy wool and have it scoured on commission by CWH. It would also allow NZWSI to pay more for greasy wool and attract raw material away from CWH. Both actions would put competitive pressure on CWH in the market for the supply of wool scouring services. Similarly, if CWH lowered its scouring charges this would put competitive pressure on the margin between greasy and scoured prices that NZWSI could achieve. In other words, this would put competitive pressure on NZWSI in the market for the supply of wool scouring services.

29. In my opinion, the Commission's analysis in Decision No. 666, upon which CWH's view that NZWSI is not currently a major constraint on it appears to rest, does not take fully into account that NZWSI's vertically integrated scouring also competes with CWH's commission scouring. NZWSI is currently a significant competitive constraint on CWH. If the proposed transaction should proceed, this significant constraint will disappear entirely.

Constraint from potential entry

30. In relation to potential entry, the Commission concluded in Decision No. 666 that entry into the wool scouring markets would be likely, sufficient in extent and timely in the event of a 5% to 10% price increase and that as a result participants are "likely to face some constraint from potential competition" eventually.¹²

31. In my opinion, the Commission is very significantly more optimistic than justified about the speed of reaction of potential competitors and the extent of the price rise required to induce new entry.

32. The most likely basis for new entry is either a joint venture between wool exporters or a new entrant investor from outside the industry sponsored by a collection of wool exporters underwriting the volume of throughput it would need. The options facing any potential new entrant would be to build a new modern scour employing the latest technology or establish a scour employing second hand and old technology and upgrade it to meet New Zealand's environmental standards. In my opinion, each of these means of entry faces considerable barriers in practice.

¹² Commerce Commission, Decision No. 666, pp.21-6.

33. Wool exporters have owned scours in the past and many exited them with significant capital losses as wool volumes declined from the 1980s onwards. Corporate memories among wool exporters of these events are still sharp; several of the current leaders of the industry had direct experience of scour closures. Moreover, the capital expenditure to establish a modern efficient 3 meter wide scour which meets New Zealand's environmental requirements is [], a very significant sum relative to the equity of most wool exporters and beyond the financial capacity of most of them. Even the lesser cost of upgrading a second hand and narrower scour to meet current environmental requirements would be a financial challenge for wool exporters.
34. Several wool exporters collectively making a long term commitment to provide volumes to utilise a new scour is likely to be necessary to underwrite the investment, whether the new entrant entity is a joint venture of several wool exporters or involves an outside equity participant. Collective action and co-operation is not a feature of the wool exporter industry; in fact, vigorous competition among them is the norm.
35. Further, according to NZWSI, the average charge for wool scouring amounts to only []. According to Statistics New Zealand's Infoshare database, the average price of wool exported over the five years 2006-10 was \$4.26/kg. So, on average, wool scouring is around [] of the weighted average value of wool exported. Thus, it takes a very significant percentage rise in the charge for wool scouring to have a material percentage effect on the price of scoured wool. For example, a [] rise in the price of scouring, if fully passed on, would increase the price of wool by only about [].
36. In my opinion, taking into account all these factors, if the proposed transaction should proceed, CWH is "likely to face some constraint from potential competition"¹³ but the constraint will be very weak. It would take sustained price rises of at least 10%, and probably significantly more, to induce entry.

Constraint from outside the market

37. The Commission concluded in Decision No. 666 that market participants "might be constrained to some extent by the potential for diversion of some of its throughput to overseas scours. However, this constraint is likely to be limited."¹⁴ It based this conclusion of limited constraint largely on its estimate that the wool currently scoured in New Zealand available for export to China in greasy form is only 8% of the total clip. The Commission arrived at this estimate by multiplying the proportion of New Zealand's wool

¹³ Commerce Commission, Decision No. 666, p.26.

¹⁴ Commerce Commission, Decision No. 666, p.28.

clip exported (85%) by the proportion by **value** of wool exports sent to China (28%) and the proportion of wool exported to China in scoured form (35%).

38. More recent data relating to the year to June 2010 provided by CWH with its application put the percentage of the wool clip exported at 86%, the proportion of the **volume** of wool exports sent to China at 38% and the proportion of wool exported to China in scoured form at 43%.¹⁵ The use in the calculation of volume figure rather than value figure for the share of exports to China appears to me to be a more appropriate means to estimate the market share at risk as scouring is charged for on a volume basis and not on a value basis.
39. Multiplying together CWH's updated figures, using the approach developed by the Commission, I estimate the wool currently scoured in New Zealand available for export to China in greasy form for scouring in China is 14% of the total clip.¹⁶ This is still a relatively small proportion. The Commission concluded in Decision No. 666 on the basis that the percentage was 8% that the potential for diversion of some of the throughput to overseas scours is a constraint that "is likely to be limited". That the percentage is now 14% is not, in my opinion, a sufficient increase to alter this conclusion.
40. The calculation of 14% of the total clip being vulnerable to diversion to scouring in China assumes that wool currently scoured in New Zealand destined for other markets will not be sent to China for scouring and subsequently shipped to another country for further processing. I believe this is a very reasonable assumption. The Commission estimated in early 2009 that China's cost advantage over New Zealand in scouring was approximately \$0.05/kg.¹⁷ In its authorisation application, CWH has suggested a more current figure taking into account subsequent appreciation in the value of the New Zealand dollar and improvements in the efficiency of Chinese scourers is a scouring cost advantage to China of \$US0.08 - \$US0.10/kg or \$NZ0.106 - \$NZ0.133/kg at an exchange rate of NZD/USD of 0.7500.
41. Even if CWH's figures are accepted, it is very doubtful if this differential in costs of scouring *per se* could cover the other additional costs which would be incurred. Wool sent to China greasy needs to be dumped in New Zealand to compress the bales. This additional cost is \$13.50 per bale or \$NZ0.082/kg greasy¹⁸ If the wool is to be re-exported from China to a third country it is likely to require dumping again in China and will also face the costs of internal cartage, loading and international shipment to the

¹⁵ CWH, Authorisation Application, pp. 19-20.

¹⁶ $0.86 \times 0.43 \times 0.38 = 0.14$.

¹⁷ Commerce Commission, Decision No. 666, p.27.

¹⁸ CWH, Authorisation Application, p.21.

destination of its next processing step, which might be a considerable distance away from China in South Asia, the Middle East or Europe .

42. Moreover, wool is a luxury product; this applies to both wool used in apparel and wool used in carpets and furnishings. The integrity of the supply chain is important for many of the ultimate buyers of wool products in developed economies. For this reason, I doubt many buyers of New Zealand wool serving developed markets would be willing to send wool to China for scouring before they process it in a third country.

43. In my opinion, if the proposed transaction should proceed, CWH is likely to face only a very limited constraint from potential competition from outside the market, specifically from scourers in China.

Countervailing power

44. According to the Commission in Decision No. 666 “in the factual scenario [i.e., two scourers] the countervailing power of wool merchants is likely to be less [than] in the counterfactual [i.e. three scourers]. However, given the presence of NZWSI, the possibility of scouring some wool offshore, and the threat of entry, the Commission is of the view that merchants would continue to have the ability to switch, or to credibly threaten to switch, and for that reason would be likely to continue to exercise significant countervailing power in the factual.”¹⁹

45. Should the current proposed transaction proceed, however, NZWSI will no longer be present. The possibility of scouring increased wool offshore is limited and the likelihood of any new entrant is low and even if one did arise it would take some time to establish and so not be available immediately as a threat to use in negotiations. To successfully exercise countervailing power, any threats have to be realistic and credible. Thus, in my opinion, the countervailing power of wool merchants will be materially less if the current proposed transaction proceeds and there is only one wool scourer in the country compared with the situation under the status quo with two wool scourers operating.

The presence of excess capacity and economies of scale²⁰

46. In its competitive analysis supporting its Decision No. 666 the Commission recognises that the presence of excess capacity in a capital intensive industry with a high proportion

¹⁹ Commerce Commission, Decision No. 666, p.29.

²⁰ The Commission (and NERA) use the term “economies of scale” in the context of this discussion when strictly speaking it is not appropriate. Economies of scale relates to how costs vary as all factors of production are increased simultaneously whereas what the Commission (and NERA) are referring to is how total costs vary as the utilisation of existing capital capacity increases by increasing all other inputs.

of fixed costs, such as scouring, can reinforce the constraint of actual and potential competition upon a firm's ability to increase prices.²¹ The rationale is that, if there is spare capacity and fixed costs are significant, competitors have a strong incentive to resist price rises and undercut one another to increase their capacity utilisation and spread their fixed costs over a larger output.

47. The capacity utilisation of NZWSI has increased at both its Whakatu and Kaputone scours since 2008/09 when Decision No. 666 was prepared. At Whakatu, capacity utilisation has gone from [] in the twelve months ended January 2009 to [] in the twelve months ended January 2011. At Kaputone the corresponding increase in capacity utilisation is from [] to []. Although excess capacity at NZWSI has declined since Decision No. 666 was released in March 2009, there is still a reasonable level of spare capacity at both scours to ensure that NZWSI has strong incentives to attract volume from CWH. According to information provided to me by NZWSI, this incentive to attract volumes is reinforced because it could [

]

48. Under the factual of the proposed reduction from two to one scourer there would be no excess capacity in the hands of a competitor in New Zealand. NERA suggests, however, that the high fixed costs and resulting incentive for high capacity utilisation are such that, without even an existing domestic competitor, CWH is constrained from raising its prices. Indeed, according to NERA, if the demand elasticity facing CWH is -2 or less, it has no financial incentive to increase prices even if it has a local monopoly.²² For reasons I explain later²³, it is very unlikely that the demand elasticity facing CWH would be above -1 and the relevance of NERA's critical loss analysis from which it draws this conclusion is very questionable in my opinion.

Coordination effects

49. In Decision No. 666, the Commission also considered whether the move from three to two scourers was likely to enhance the ability of market participants to coordinate price increases to the detriment of consumers. The Commission concluded there are factors

²¹ Commerce Commission, Decision No. 666, pp.14-6.

²² NERA, *Proposed CWH/WSI Merger, - Cost Benefit Analysis*, 8 February 2011, p.20. Hereinafter NERA, *Proposed CWH/WSI Merger*.

²³ See subsection "Allocative inefficiency" under "Detriments" below.

that are likely to enhance the scope for coordinated behaviour in the North and South Island scouring markets but that the presence of excess capacity and importance of economies of scale for maximising capacity utilisation, the absence of price transparency and the ability of customers to use two competing scours to maximise their negotiating leverage are likely to outweigh the incentives for market participants to coordinate behaviour.²⁴

50. Under the current proposed transactions, the number of scourers will fall from two to one and the one controlling entity will be able to perfectly coordinate behaviour. The level of coordination of behaviour will become very high compared with what the Commission assessed it to be under the status quo, which is the counterfactual adopted by CWH in its current authorisation application.

51. CWH has indicated that it intends to acquire 100% of NZWSI. It may not be successful in this objective, however. If CWH gets more than 50% of NZWSI it will obtain effective control of its operational activities. In practical terms this means that the competitive detriment would be as I have discussed on the assumption of 100% ownership of NZWSI by CWH. However, if CWH gains less than 90% in its takeover offer it cannot exercise compulsory purchase rights in respect of hold-out investors. It will then be unable to delist NZWSI from NZX and under the listing rules any significant transaction will require the approval of the other shareholders. The relevance of this point is that the benefits of the proposed transaction resulting from rationalising scouring capacity and assets identified by NERA and CWH may not be achievable²⁵.

Overall conclusion relating to competitive detriments

52. In Decision No. 666, after considering the above factors, the Commission was satisfied that the proposed acquisition that would reduce the number of scourers from three to two will not have, or would not be likely to have, the effect of substantially lessening competition in the North Island and South Island scouring markets.²⁶ Accordingly, the Commission provided clearance to the proposed transaction.

53. However, the presence of NZWSI was critical to the Commission's analysis in relation to several of the factors it considered in its competition analysis. Most obviously, the constraint provided by NZWSI itself, but also the countervailing power exercised by wool merchants, and the influence of excess capacity and economies of scale. Moreover, I consider that in Decision No. 666 the Commission underestimated:

²⁴ Commerce Commission, Decision No. 666, pp.29-31.

²⁵ See below for further discussion of this point.

²⁶ Commerce Commission, Decision No. 666, p.31.

- the level of constraint provided by NZWSI because it considered only its commission scouring activities whereas all its scouring activities act as a constraint; and
- the price rises necessary to induce new entry in the industry.

54. In my opinion, when these points are taken into account, the reasoning behind Decision No.666, supports the conclusion that moving from two scourers to one scourer will have, or would be likely to have, the effect of substantially lessening competition in the North Island and South Island scouring markets.

NET PUBLIC BENEFIT?

55. The second aspect of CWH's authorisation application is that the proposed transaction will result in such a benefit to the public that it should be permitted. It bases this claim on an analysis of the present value over a five year period at a 10% discount rate of the costs and benefits of the proposed acquisition of NZWSI by CWH undertaken for it by NERA.

56. In the public version of CWH's authorisation application dollar amounts for only a very few of the individual cost and benefit estimates are provided. NERA's quantifications that have been published are set out in Table 1.

Table 1: National summary of costs and benefits

Demand elasticity	-0.5	-1	-2	-3
Detriments (\$m present value)				
Allocative	(0.70) – (7.41)	(1.39) – (14.82)	0.00	0.00
Productive				
Dynamic				
Total detriments over 5 years (\$m present value)	(5.53) – (30.48)	(5.15) – (34.62)	(3.21) – (18.17)	(3.03) – (17.36)
Benefits (\$m)				

present value				
Non-capital cost savings				
Land and buildings cost savings				
Plant cost savings	-0.88	-0.88	-0.88	-0.88
Further Y quality benefits				
NZWSI Y quality benefits				
Redundancies				
Total benefits over 5 years (\$m present value)	40.84 – 58.69	42.61 – 63.37	46.17 – 72.73	49.72 – 82.09
Net benefits over 5 years (\$m present value)	10.35 – 53.16	7.99 – 58.23	27.99 – 68.52	49.72 – 82.09

57. The absence of published estimates has increased the work required to provide a reasonably comprehensive evaluation of the cost benefit analysis undertaken by NERA and the estimates it has provided. However, despite this, I believe I am able to demonstrate that NERA's analysis does not support CWH's conclusion that its proposed transaction will result in a material net public benefit such that it should be permitted.

58. The major concern I have about the NERA analysis is that it includes two very large benefits – “further Y quality benefits” and “WSI Y quality benefits” that the scientific evidence suggests are not likely to be obtained and, even if such benefits were to be achieved, would be largely captured by offshore buyers of New Zealand wool and so should only be included to a limited extent in an evaluation of public benefits for New Zealanders. Moreover, these benefits, to the extent they are real, are likely to arise under

the counterfactual any way, and one of the principles of cost benefit analysis is to exclude benefits (and costs) which arise under both the factual and the counterfactual. In other words, benefits (and costs) that will arise with and without the proposed transaction should not be included in a cost benefit analysis of the proposed transaction as they net out.

59. I will consider each line of Table 1 in turn. I shall comment on the methodology NERA used to produce its estimates for each line and, produce my own estimate using either NERA's methodology or some other methodology when I consider it is more appropriate. I re-emphasise that my estimates are based on the information currently available to me and should be reviewed by the Commission using its powers to access information that is not publicly available, and with the benefit of certain further information which NZWSI has not to date been in a position to provide due to recent events.

60. I have already noted that while CWH is seeking 100% of NZWSI it may not be successful and that if it gains less than 90% it will not be able to compulsorily acquire the minority interests. The result will be that under NZX's listing rules the minority shareholders of the new merged entity will need to approve any significant transactions, such as divestment of significant activities and plants. In my opinion, the Commission should consider the likelihood of such an outcome and the implications of this for each of the detriments and benefits discussed below. Most of the detriments would remain as I estimate them, given the high degree of common ownership, but some of the rationalisation benefits may not be available.

Detriments

Allocative inefficiency

61. To estimate the detriments of the proposed transaction due to the allocative inefficiencies it could induce, NERA estimates the deadweight loss in producers' and consumers' surplus that is available to society but is not achieved because prices are above their competitive (i.e. allocatively efficient) level. The approach adopted by NERA is the standard approach adopted by economists and by the Commission. I support use of the methodology NERA has chosen but not its application of it.

62. One criticism I have of NERA's application is that it has limited the range of price increases it has used to derive its low and high estimates to 1% - 10%. This reflects NERA's view that the proposed transaction will have limited competitive detriment. In my analysis in the previous section I concluded that this was unlikely to be the case; that the proposed transaction was likely to lead to a significant lessening of competition. This can

be interpreted as the new merged monopoly would be able to sustain a non-transitory increase in price of more than 5 – 10%. On this basis, I believe a more appropriate range of price changes over which to undertake the calculations would be 10% - 20%.

63. A second criticism of NERA's application I have is that it has used for its calculations price elasticities of demand which range from -0.5 to -3. I believe this is an implausibly high range for the price elasticity of demand for wool scouring. What NERA has overlooked is that scouring is an input into the production of scoured wool and so the demand for scouring is derived from the demand for scoured wool. As a result, the price elasticity for scouring will be the product of the price elasticity for scoured wool and the proportion of the total cost of scoured wool attributable to scouring.²⁷
64. According to NZWSI the average price of scouring is about []. According to Statistics New Zealand's Infoshare database, the average price of wool exported over the five years 2006-10 was \$4.26/kg. So, on average, wool scouring is around [] of the value of wool exported. For demand for wool scouring to have a price elasticity of -3, the price elasticity of demand for scoured wool has to be around []. This means a 1% increase in the price of scoured wool would lead to a [] reduction in demand for it. This is implausible in my experience. In my opinion, a more plausible range for the price elasticity of demand for wool scouring is -0.05 to -1.
65. A corollary of this discussion is that the critical loss analysis undertaken by NERA²⁸ which shows that for elasticities of demand of -2 and lower a merged entity would not profit by raising price is largely redundant. This is because the likelihood is low that the demand elasticity for this input into scoured wool would be anywhere near -2, never mind lower. This analysis is a significant factor behind CWH's conclusion that the competitive detriment of the proposed merger would be small and so this is a significant weakness in NERA's analysis.
66. I have set out my own estimates of the annual allocative inefficiency detriment of the proposed transaction in Table 2. The assumptions behind this table, which should be checked by the Commission, are that:
- The average pre-merger market price for scouring is [];

²⁷ This point was made by the Commission in its Airport price inquiry when discussing the price elasticity of demand for airfield services. The demand for airfield services is derived from the demand for air travel and its elasticity has to reflect the elasticity of the demand for air travel and share of airfield services in their cost. See Commerce Commission, *Airport Pricing Inquiry*, 2002, p.80.

²⁸ NERA, *Proposed CWH/WSI Merger*, pp.9-13.

- The average pre-merger variable costs of a scour were [] (according to NZWSI);
- The quantity of wool produced in 2009/10 was 133,000 tonnes and approximately 75% was scoured; and
- [] of the wool clip is subject to a long term fixed price contract for wool scouring and so not susceptible to any price increase in the five year period of the analysis.

67. On the basis of these figures the combined national costs per year across a range of assumed demand elasticities and price increases between 10% and 20% are shown in Table 2.

Table 2: National allocative inefficiency costs (\$ per year)

	Demand elasticity			
Price increase	-0.05	-0.25	-0.5	-1.0
10%	[]	[]	[]	[]
15%	[]	[]	[]	[]
20%	[]	[]	[]	[]

68. Table 3 sets out the net present values of these sums over a five year period at a discount rate of 10%. They range from [].

Table 3: National allocative inefficiency costs (NPV over five years at 10% discount)

	Demand elasticity			
Price increase	-0.05	-0.25	-0.5	-1.0
10%	[]	[]	[]	[]
15%	[]	[]	[]	[]
20%	[]	[]	[]	[]

Productive inefficiency

69. A monopoly producer is normally considered to lack the competitive pressure to be efficient and as a result a merger that reduces the number of scourers from two to one would be considered likely to yield a productive efficiency loss. As NERA notes, the Commission has typically estimated productive efficiency losses by assuming that the merged firm’s costs will increase. NERA adopts the Commission’s approach and calculates productive efficiency detriments as being between 1% and 10% of the dollar value of pre-merger variable costs. It chose these figures because in the Air New Zealand/Qantas merger case the Commission used a factor of 1 – 5% and in the “newco” dairy cooperative merger case it used 5 – 10%.

70. I support NERA and the Commission’s approach to estimating productive inefficiencies but in my opinion, the range used in the “newco” dairy case of 5 – 10% is more realistic. This is because “newco” involved going from two major suppliers to one major supplier and so is more like the two to one proposal for wool scouring than the merger of Air New Zealand and Qantas. This merger, if it had proceeded, would have left a number of other financially strong participants and potential entrants to compete on many routes with the merged entity.

71. I estimate on the basis of data from NZWSI that the average variable costs of the industry to be around []. Since production in 2009/10 was 133,000 tonnes and approximately 75% was scoured this equates to total revenue of []. Table 4 sets out my estimates of productive inefficiency per year.

Table 4: National productive inefficiency costs (\$ per year)

Productive inefficiency factor	National detriment
5%	[]
10%	[]

72. Over a five year period at a discount rate of 10% the range of these values is from a net cost of [].

Dynamic inefficiency

73. NERA notes that in the Air New Zealand/Qantas merger case the Commission’s approach to calculating the loss in “general dynamic efficiency” was to multiply total revenue by a factor between 0.5% and 1.5%.

74. I estimate that average revenue in the scouring industry is about []. Since industry production in 2009/10 was approximately 133,000 tonnes of which approximately 75% was scoured this implies total revenue of []. Table 5 sets out my estimates of dynamic inefficiency detriment per year using the Commission’s approach.

Table 5: National dynamic inefficiency detriment (\$ per year)

Dynamic inefficiency factor	National detriment
0.5%	[]
1%	[]
1.5%	[]

75. NERA recognises that the Commission’s view in the Air New Zealand/Qantas case was that this approach captures dynamic inefficiencies from both reductions in demand (product innovations) and increases in costs (process innovation). However, NERA to be conservative also includes a separate estimate of the dynamic inefficiency detriments for a reduction in demand, assuming different elasticities and shifts in demand. These ranged from \$1.8 million when the assumed demand shift was 1.5% and demand elasticity -0.5 down to \$175,000 when the assumed demand shift was 0.5% and demand elasticity was -3.

76. The Commission’s approach to estimating dynamic inefficiency detriments is not founded in theory or easy to rationalise and NERA’s complement of a separate demand reduction component does not address this fundamental concern either. Moreover, it utilises a price elasticity range which I consider to be inappropriate for reasons I have already explained. To my knowledge there is no theoretically robust methodology for estimating dynamic efficiency losses.

77. The ad hoc nature of the estimates used by the Commission and NERA would be more acceptable if the results were plausible. However, they are not. It is widely held by economists that dynamic inefficiency detriments are more material than either allocative

Table 6: National non-capital cost savings (\$ per year)

Non-capital cost saving factor	Non-capital cost savings
0%	[]
5%	[]
10%	[]

82. Over a five year period at a discount rate of 10% the range of the estimates of non-capital cost savings is from a net benefit of [].

Land and buildings cost savings

83. According to NERA, under the factual, the land and buildings at Whakatu and Kaputone will be released as inputs into wool scouring with immediate effect and the land and buildings disposed of. NERA has applied the approach adopted by the Commission in Decision No. 410 relating to the Ruapehu ski lift merger case and added as a benefit under the factual the market values of these sites. NERA has not, however, provided in the public document the market values of these properties.

84. There are two aspects of NERA’s approach which I believe deserve addressing. Firstly, the current market value of a property reflects expected benefits it will provide for the rest of its expected life and for all land and most buildings, including the scours at Whakatu and Kaputone, this will be greater than five years. However, the other costs and benefits are limited to a five year term in the analysis. The result is that NERA’s approach will overstate the net present value of the benefit over the five year term.

85. Secondly, it will undoubtedly take time, especially in current market conditions, to shift the equipment from Whakatu and Kaputone, prepare the sites for sale, market the sites, and achieve a sale and effect settlement. In the case of Kaputone, it adjoins Silver Fern Farm’s major works at Belfast and these have been, or will soon be, closed. A comprehensive change to the City Plan has been put forward to rezone the sites. With the delay necessary to effect this change, especially since it is unlikely to be a high priority for the local council given the earthquake related issues it will be dealing with, it is likely to take considerable time to sell this site. The proceeds of the sale should be discounted to reflect these time lags. Using a 10% discount rate, if the lag is one year for

Whakatu and four years for Kaputone, which appear realistic to me, the estimated values should be discounted by this amount.

86. NZWSI has provided me with current market valuations of the land and buildings at its Kaputone and Whakatu scours. These are shown in Table 7.

Table 7: Current market values of scouring land and buildings

Site	Estimate of market value
Kaputone	[]
Whakatu	[]

87. To adjust NERA's numbers for the points I have made above, I will assume that:

- the annual rental values of properties is 10% of their current market value;
- under the factual, Kaputone is sold for its current market value in four year's time; and
- under the factual, Whakatu is sold for its current market value in one year's time.

88. Using these assumptions, the net present value over five years at 10% of the benefit from rationalising sites under the factual compared with the benefit under the counterfactual is [].

Plant cost savings

89. NERA suggests that because wool scouring plant is specialised and has limited alternative use its opportunity cost to society will be low compared to its replacement cost and book value and could be approximated by its scrap value. NERA also suggests that the same amount of plant will be used in the factual as in the counterfactual, albeit the two lines at Clive will be mothballed. For these reasons, NERA estimates there will not be much difference in the cost of existing plant in the factual and counterfactual.

90. A concern I have about NERA's approach to this component is that it overlooks there is an active second hand market for scouring plant. Indeed, CWH refers to this market in the authorisation application and goes so far as to suggest that if it does not buy NZWSI's plants these may be shipped to China and be used there. So scrapping is not

the only alternative use for existing plant, it can be sold on a second hand market, presumably for more, and potentially significantly more, than scrap value.

91. NERA also considers potential differences in future capex under the factual and the counterfactual and correctly notes that because these are forward looking costs they should be captured in the cost benefit analysis. NERA provides its estimate of \$0.88 million as the five year present value of extra expenditure on plant and equipment under the factual than under the counterfactual. NERA gives only limited information about the nature of this extra capex, but it appears to me that at least a significant portion of it relates to proposed investments to improve the Y or brightness colour factor of scoured wool produced by the current NZWSI scours.
92. For reasons I will explain in the next subsection, I believe the claims relating to the ability of CWH to improve the base Y colour factor of scoured wool are not correct. Despite this, however, I believe that under the factual CWH will proceed with these investments because it believes they will result in benefits to it. We assume NERA is correct and its \$0.88 million, or \$0.9 million when rounded, gives the five year present value cost of additional plant changes under the factual.

Quality improvements

93. CWH believes that its proposed investments in plant to improve the scouring process would result in the wool becoming “whiter” or “brighter” and that this will improve the value of the output of the scours as there is a premium for “whiter” and “brighter” wool. In colour physics it is standard to use three variables to describe colour – X (hue), Y (tone) and Z (saturation).³⁰ In the case of wool, the Y factor is usually associated with the brightness of the wool. The higher the Y factor, the more versatile is the wool, as the wider the range of shades to which it may be dyed. Increased versatility increases the price it will fetch, other factors constant.
94. NERA have used the improvement in brightness CWH claims it can achieve along with data on how price changes as the Y factor changes to estimate the economic value of the claimed quality improvement. NERA suggests that the merger will allow returns for wool growers, merchants or the merged entity, or a combination of all three, to increase by the value of a one-unit Y uplift for CWH’s North Island volumes (“further Y quality

³⁰ The author of this report holds a Graduate Gemologist (GG) qualification from the Gemological Institute of America (GIA). Colour physics – what determines colour, how to describe it and how to change it - are important aspects of gemology.

benefits”) and the value of a further one-unit Y uplift on all of NZWSI’s pre-merger scoured volumes (“NZWSI Y quality benefits”).³¹

95. There are three issues with these benefit estimates. Firstly, NZWSI has received advice from Dr G A Carnaby, a leading wool scientist, which casts considerable doubt on CWH’s claim to be able to improve the base Y factor of wool by the methods it has described. The full report from Dr Carnaby is attached as Appendix A to this report. In my opinion, the information contained in this report means that no benefits can be attributed to improvements in the quality of the Y factor in the cost benefit analysis on the basis of the investments proposed by CWH.

96. Secondly, although NERA recognise that any economic benefit from a technologically induced improvement in colour could be spread among wool growers, merchants and the merged wool scour they overlook that the benefits could also pass to buyers and consumers. Indeed, given the competitive position of wool relative to other fibres, and that the scouring techniques referred to by CWH appear to be easily replicable and widely known, the most likely beneficiaries of the improvement in quality will be buyers and ultimately consumers. Since 86% of New Zealand’s wool production is exported this means that, if there was a benefit, and the benefit was dependent on the merger to be achieved then only as little as 14% of the benefit should be counted as a public benefit for New Zealanders.

97. Thirdly, implicit in NERA’s treatment of these suggested benefits is the assumption that they can only be realised if the merger proceeds. NERA does not explain why this is likely to be the case. The technology which CWH claims can improve the Y factor is readily available and could be adopted under both the factual and the counterfactual. It is a principle of cost benefit analysis to exclude any benefits (or costs) which are common to both the factual and the counterfactual. For this reason also I believe that no benefits should be ascribed to improvements in the quality of the Y factor in the cost benefit analysis.³²

98. [

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³¹ NERA, *Proposed CWH/WSI Merger*, p.8.

³² If CWH did not proceed with the Y factor investments after the acquisition it would receive no benefit but would avoid much of the \$0.88 million expenditure on additional plant under the factual as estimated by NERA.

99. [

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Redundancies

100. The reduction in the number of operating scours from five to two will give rise to some staff redundancies and some redundancy payments. There are two ways to look at such payments. Firstly, they can be considered as a straight wealth transfer from the employer to the (former) employee. If this is what they are, they should not be included in a cost benefit analysis of net public benefit as transfer payments between members of the public net out. Secondly, redundancy payments can be viewed as compensation to employees for the loss of human capital in the form of on-the-job experience. If the payments are of this nature, they represent a social cost and so should be included in a calculation of net public benefit.

101. On the grounds of being conservative, NERA has treated redundancy costs as a social cost and so included an estimate of them in the cost benefit analysis. I agree with their conservative approach. They do not say what the figure is, but my own estimate is 50 staff at an average of between \$10,000 and \$20,000 each, or \$0.5 million to \$1.0 million. Since the payments will be one off and made “up-front” these figures are also the net present value figures. The Commission will need to check the accuracy of these estimates.

Other factors?

102. I have not identified any elements missing from NERA’s cost benefit analysis. The only possible exceptions are the potential loss in benefits should AgResearch cease to try to improve colour quality and some potential loss of public benefits of the effluent improvements that according to NZWSI have been made at Kaputone compared with other scouring sites, if this site should be closed. I have not been able to definitively identify or quantify either benefit and leave them as matters the Commission may wish to investigate using its powers.

Summary and conclusion relating to public benefits

103. Table 8 summarises my high and low estimates of the costs and benefits of the proposed transaction and compares these with NERA’s estimates for demand elasticities

for scouring of -0.5 and -1. For reasons I have explained above, I do not consider NERA's estimates for demand elasticities of -2 and -3 are relevant as they imply implausibly high demand elasticities for scoured wool.

104. From Table 8 it can be seen that after adjusting for the changes to NERA's cost benefit analysis I believe should be made I arrive at an estimate that the proposed acquisition will result in a net public cost of between \$6.2 million and \$48.2 million.

Table 8: Comparison of NERA and my cost benefit estimates

	NERA's Estimates		Revised Estimates	
	-0.5	-1	Low	High
Detriments (\$m present value)				
Allocative	(0.70) – (7.41)	(1.39) – (14.82)	[]	[]
Productive			[]	[]
Dynamic			[]	[]
Total detriments over 5 years (\$m present value)	(5.53) – (30.48)	(5.15) – (34.62)	5.6	51.8
Benefits (\$m present value)				
Non-capital cost savings			[]	[]
Land and buildings cost savings			[]	[]
Plant cost savings	-0.88	-0.88	-0.9	-0.9
Further Y quality benefits			0.0	0.0

NZWSI Y quality benefits			0.0	0.0
Redundancies			-0.5	-1.0
Total benefits over 5 years (\$m present value)	40.84 – 58.69	42.61 – 63.37	-0.6	3.6
Net benefits over 5 years (\$m present value)	10.35 – 53.16	7.99 – 58.23	-6.2	-48.2

Brent Layton
7 March 2011