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Public Version

Draft Determination

Note: This is a draft determination issued for the purpose of advancing the Commerce Commission's decision on this matter. The conclusions reached in this draft determination are preliminary and take into account only the information provided to the Commission to date.

This is a draft determination under the Commerce Act 1986 in the matter of an application for authorisation of a restrictive trade practice. The application is made by:

Infant Nutrition Council Limited

The Commission:	Dr Mark Berry Sue Begg Anna Rawlings
Summary of application:	The Applicant has applied for authorisation of an arrangement under which its members to restrict the marketing activities of infant formula for children under six months of age.
Draft Determination:	The Commerce Commission's preliminary decision is that, on the basis of the information provided to date, it should grant authorisation for the application, due to the public benefits that will result, or be likely to result, from the arrangement.
Date of draft determination:	3 March 2015

Confidential material in this report has been removed. Its location in the document is denoted by [ ].

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Introduction

1. On 25 November 2014 the Commission received an application (the Application) from the Infant Nutrition Council Limited (the INC or the Applicant) under section 58 of the Commerce Act 1986 (the Act) for authorisation of possibly restrictive trade practices. The Commission is considering this application under the streamlined authorisation process.[1]

2. The Commission is releasing this draft determination to provide interested parties with an opportunity to comment before the Commission makes its final determination.

Draft determination: grant authorisation

3. The Commission's draft determination is to grant authorisation for the Application.

4. The INC arrangement involves restrictions on advertising and marketing of infant formula[2], prohibitions on distributing gifts or free samples to pregnant mothers or caregivers, and prohibitions on offering inducements to health professionals to promote infant formula. The Commission concludes that the INC arrangement is likely to lessen competition, but that the competitive detriments are outweighed by the likely public benefits.

Next steps

5. The Commission now seeks written submissions on the draft determination. Submissions should be received by the Commission on or before 24 March 2015.

6. The Commission may determine to hold a conference prior to making a final determination.[3] However, in this case the Commission considers a conference to be unnecessary. The Commission has tested the Applicant's claims with a variety of industry parties, and has also received a number of submissions from public parties. All these sources generally support authorisation.

7. Nevertheless, the Applicant, or any interested party who receives a copy of the draft determination from the Commission, may request that the Commission hold a conference. The Commission is required to hold a conference if one is requested.[4]

8. If any such person wishes to request a conference, they must do so in writing on or before 17 March 2015.

Applicant background

The Application

9. The Application seeks authorisation for an arrangement to which section 27 of the Act may apply. The INC submits that their arrangement is intended to further New Zealand's obligations under the World Health Organization's *International Code of Marketing of*

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1 See Commerce Commission, *Authorisation Guidelines*, July 2013 for further information on the streamlined process.

2 Infant formula is common industry term used to describe a product that is represented as a breast milk substitute for infants and which satisfies the nutritional requirements of infants aged from birth up to approximately six months of age. See, for example, the *Australia New Zealand Food Standards Code*, standard 2.9.1.

3 Commerce Act 1986, section 62(6).

4 Commerce Act 1986, section 62(3).

Breast Milk Substitutes (the WHO Code), which aims to protect and promote breastfeeding.

10. Specifically, the INC seeks authorisation for elements of its *Code of Practice for the Marketing of Infant Formula in New Zealand* (the INC Code or the Arrangement), under which INC members (the Members) restrict the following infant formula marketing activities:

    10.1 advertising infant formula to the general public;

    10.2 distributing free samples to pregnant women, mothers of infants, or the families and caregivers of infants;

    10.3 distributing free samples to healthcare professionals as a sales inducement;

    10.4 marketing personnel seeking direct or indirect contact with pregnant women or with parents of infants and young children;

    10.5 distributing bulk quantities of free infant formula product to the health system, as a sales inducement;

    10.6 distributing gifts of utensils or other articles that may discourage breastfeeding, whether to pregnant women, mothers of infants, or caregivers of infants; and

    10.7 offering inducements to health workers, health practitioners, or their families to promote infant formula.

11. The Arrangement only applies to products classified as infant formula. Other products intended for later-stage use, such as follow-on formula and toddlers' milk, are excluded from the Arrangement.

12. The INC Code does not place any restrictions on the Members' pricing decisions.

13. Retailers are entirely unimpeded in their ability to independently advertise or market infant formula. Retailers are not Members and, consequently, are not subject to the INC Code.

Membership of the INC

14. The INC is an association representing the infant formula industries in both Australia and New Zealand. The INC was formed in 2012 through a reorganisation of predecessor associations, and is owned by its Members. These Members include manufacturers, marketers and importers of infant formula.[5] In New Zealand, the most prominent Members include:

    14.1 Danone Nutricia Early Life Nutrition, part of the Group Danone, which supplies the Karicare and Aptamil brands of infant formula;

    14.2 H J Heinz Company (New Zealand) Limited, which supplies the Nurture brand of infant formula;

[5] See Appendix 4 of the Application for a full list of existing Members.

14.3 Nestle New Zealand Limited, which supplies the Nan and S-26 brands of infant formula; and

14.4 Fonterra Co-operative Group Limited.

15. The INC is a voluntary organisation. Nevertheless, the Members currently represent over 95% of the volume of infant formula manufactured, sold and exported from New Zealand.

Industry background

Ministry of Health

16. The WHO Code was voluntarily adopted by the Government of New Zealand in 1983. Since that time, the Ministry of Health (MOH) has been responsible for giving effect to the WHO Code in New Zealand. The MOH has chosen to do so through a voluntary approach, rather than through legislation.

17. While the MOH is not a member of the INC, the two organisations have advised that they coordinate closely with one another, particularly when it comes to resolving public complaints about the marketing and advertising of infant formula. For example, the INC's complaints process is largely administered by the MOH.

18. In the absence of the INC Code, it is likely that the MOH would ultimately assume a more direct regulatory role in the infant formula industry. However, there is uncertainty about the time required to enact the necessary legislative framework.

Maternal health organisations

19. A number of health care organisations responded to the Commission's request for comments on the Application. Among these parties, support for breastfeeding was unanimous. Although formal regulation was generally the preferred approach, considerable concern was also expressed regarding the possibility of the Arrangement not being authorised.[6]

20. In particular, the following parties expressed their general support for granting authorisation:

20.1 Neonatal Nurses College of Aotearoa;

20.2 New Zealand Nurses Organisation;

20.3 New Zealand College of Midwives;

20.4 Women's Health Action Trust; and

20.5 Carol Bartle and Dr Alison Barrett (joint submission).

[6] Some interested parties also expressed a desire for the Commission to authorise certain provisions that are not part of the INC Code. While the Commission can impose conditions on authorisation, or otherwise authorise a subset of what was requested in an application, the Commission cannot authorise a broader or more inclusive arrangement than was submitted in an application.

Retailers

21. Two large supermarket chains, operated by Progressive Enterprises Limited and the Foodstuffs group, sell the vast majority of infant formula consumed in New Zealand. Some infant formula is also sold through alternative channels, such as pharmacies, online retailers and general merchandise stores. Finally, a small volume of formula is supplied through hospitals.

How the Commission assesses restrictive trade practice authorisations

22. Section 27 of the Act prohibits contracts, arrangements or understandings that have the purpose, effect, or likely effect, of substantially lessening competition in a market.

23. Upon application under section 58 of the Act, the Commission can authorise conduct that may otherwise breach section 27 of the Act. However, the Commission must be satisfied that such conduct would be likely to result in benefits to the public of such a degree as to outweigh any likely lessening of competition (ie the competitive detriments).

24. In assessing an application, the Commission determines whether the conduct would likely lessen competition. The lessening of competition need not be substantial.[7] If the Commission does not consider that a lessening of competition is likely, it does not have jurisdiction to further consider the application and, consequently, will not go on to consider the public benefits of the conduct.

25. If the Commission is satisfied that the public benefits either outweigh the competitive detriments or are likely to do so, the Commission may grant the authorisation. Otherwise, the Commission will decline to grant the authorisation.

Relevant market – stage one infant formula sold in New Zealand

26. When the Commission considers an application for authorisation of potentially restrictive trade practices, it assesses the competitive effects of those practices in respect of a particular relevant market.

27. Determining the relevant market requires a judgement as to whether, for example, two products are sufficiently close substitutes (as a matter of fact and commercial common sense) so as to provide significant competitive constraints on each other. Markets are defined in a way that best isolates the key competition issues that arise from the application.

28. There are three stages of infant formula. Stage one formula is designed for infants from birth to the age of approximately six months. Stage two formula, also known as "follow-on formula", is designed for infants from approximately six months to one year of age. Stage three formula, also known as "toddlers' milk", is designed to be used from approximately one year of age onwards. The composition of stage three formula differs significantly enough from stage one and two formula that they are not generally substitutable.[8]

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7 Commerce Act 1986, section 61(6A).

8 For example, most stage three formula is casein-dominant, while most stage one and two formula is whey-dominant.

29. Stage two and three formulas are designed primarily as dietary supplements, rather than complete dietary replacements. Stage one formula, on the other hand, is intended to be a substitute for breast milk as the sole source of an infant's nutrition.

30. While stage one formula can continue to be used in place of stage two formula, the composition of stage two formula typically renders it inappropriate for infants under approximately six months of age. As such, stage two formula cannot generally substitute for stage one formula.

31. As submitted by the Applicant, the Commission considers the relevant market for this application to be stage one infant formula sold in New Zealand through retail channels.[9]

With and without the arrangement

32. When assessing the likelihood of a lessening of competition from an arrangement, the Commission compares the likely state of competition with the arrangement (the factual scenario) and the most competitive, likely state of competition without the arrangement (the counterfactual scenario). By assessing the relative state of competition in each scenario, the Commission can determine whether the arrangement will likely result in a lessening of competition.

With the arrangement

33. In the factual scenario, with the Arrangement in place, all existing and future Members of the INC are assumed to adhere to the INC Code and restrict their infant formula marketing activities accordingly.

Without the arrangement

34. In the absence of the Arrangement, the Commission has considered three possible counterfactual scenarios:

    34.1 unimpeded advertising and marketing of stage one infant formula;

    34.2 a one or two year period of unimpeded advertising and marketing, followed by legislated restrictions; and

    34.3 a longer period of unimpeded advertising and marketing, followed by legislative restrictions.

35. If the INC Code were no longer in effect, the Applicant submits that the MOH would ultimately take steps to impose analogous restrictions, due to New Zealand's obligations as a signatory of the WHO Code.[10] However, the Applicant recognises that for a period of time before such restrictions were imposed, suppliers of infant formula may be

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[9] The Application at [70]. The Applicant notes that supply to hospitals is potentially a separate market from supply to retailers. Given the small volume of hospital purchases, specialty product requirements, unusual distribution models and the widespread access by medical professionals to factual information on infant formula products, the Commission accepts that such a distinction may be appropriate. However, since the same characteristics imply that the Arrangement is unlikely to raise significant competition issues for hospital distribution, the issue will not be considered further.

[10] The Application at [83].

incentivised to market their products.[11] The Applicant believes that the overall effect of this marketing may be some reduction in infant breastfeeding rates.[12]

36. The Commission agrees that indefinite, unimpeded advertising and marketing is an unlikely scenario. In the absence of the INC Code, the Commission considers that the MOH would ultimately put in place legislated restrictions comparable to (or more restrictive than) the INC Code.

37. There is, however, considerable uncertainty about the length of time it would take for the legislative process to complete. While the Applicant submits that enacting such legislation would require "a couple of years", past experience suggests it may take significantly longer.[13] For the purpose of assessing this Application, the Commission considers that both a shorter and a longer scenario are likely possibilities.[14]

38. Analysing the counterfactual scenario with the greatest degree of competition leads to an estimate of the greatest potential harm from the Arrangement, and best enables the Commission to identify any competition issues arising from the Arrangement. In this case, the most competitive counterfactual scenario is the one with the longest period of unrestricted advertising and marketing.

39. Therefore, the Commission adopts as the appropriate counterfactual the most competitive likely alternative: at least two years of unimpeded advertising and marketing, followed by government legislation.

How the Arrangement could impact competition

Theory of harm

40. Under the counterfactual, there would be a period of time wherein Members of the INC would be free to market and advertise infant formula. The Arrangement restricts this ability.

41. Advertising and marketing can facilitate competition and benefit consumers in several ways. Firstly, it can provide consumers with price information across rival products and help inform consumers' purchasing decisions between suppliers. Conversely, restrictions on advertising can lead to higher prices, if they prevent suppliers from publicising price reductions or discounts. Higher prices can, in turn, lead to fewer purchases than would occur at more competitive price levels, resulting in reduced economic activity (ie a loss in allocative efficiency).

42. Secondly, advertising can provide consumers with general information about the advantages of products. Equivalently, advertising and marketing restrictions can limit the

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11 The Application at [110].

12 The Application at [119].

13 The Application at [114]. While much more contentious, an analogue can potentially be found in the recently enacted *Psychoactive Substances Act 2013*. According to the MOH, consideration of the legislation began in 2007, after a number of years of growing concern over the availability and use of unregulated psychoactive substances. Although the act was passed in July 2013, it was not until November 2014 that all the supporting regulations came into effect.

14 It is not necessary to weigh the relative likelihood of each scenario. For the purposes of this analysis, it is sufficient that each scenario be likely.

ability of potential consumers to learn about the advantages of purchasing certain products. Incomplete information can therefore lead to consumers making fewer purchases, or making purchasing decisions that do not provide them with the best possible outcome. As a result, consumers may miss out on benefits they would otherwise obtain from these products (ie a loss in allocative efficiency).

43. Thirdly, advertising can be used by firms to publicise new product innovations that are beneficial for consumers. Restrictions on advertising can reduce the incentive of firms to undertake such innovation, to the long term detriment of consumers (ie a loss in dynamic efficiency). In a similar manner, restrictions on advertising can also make it more difficult for new entrants to enter the market with new innovative products.

Would the Arrangement be likely to lessen competition?

44. The Commission agrees with the Applicant that the INC Code is likely to lessen competition.[15] The INC Code deprives the Members of the opportunity to employ common advertising and marketing activities, therefore limiting the information available to potential consumers.[16]

45. However, the Commission does not consider that the Arrangement necessarily results in higher prices. The INC Code does not prevent suppliers from price discounting, and also does not prevent retailers from advertising those price discounts.[17]

46. The Commission also does not consider that marketing and advertising restrictions result in lower levels of product innovation. The New Zealand market is predominantly supplied by large multi-national companies, with research and development decisions undertaken in a global context. The relatively small size of the New Zealand market means that any local restrictions on advertising are unlikely to affect these decisions.

47. Rather, the Commission considers that the Arrangement likely harms consumers by restricting the ability of suppliers to inform potential consumers of the benefits of purchasing infant formula. Put another way, the Arrangement likely hinders the ability of infant formula manufacturers to effectively 'compete' with breastfeeding.

48. There is evidence that the alternative channels of information available to mother interested in formula feeding may be limited or inconsistent.[18] If so, advertising by infant formula suppliers could fill this gap, leading to some additional consumers deciding to use infant formula instead of breastfeeding. If so, it follows that the Arrangement's limitations on advertising may result in those consumers being less well-informed.[19]

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15 The Application at [46].

16 In this case, there may be alternative channels of information available to proactive consumers (eg professional medical advice). To the extent consumers obtain this information, they may be better informed by obtaining this advice.

17 Retailers in New Zealand are not members of the INC, nor are they bound by the Arrangement.

18 Matt Burgess and Neil Quigley "Effectiveness, Implementation and Monitoring on the International Code of Breast-Milk Substitutes in New Zealand: A Literature and Interview-Based Review" (Research Trust of Victoria University, 15 July 2011) (Burgess and Quigley report*)* at 45.

19 If fully-informed, rational parents choose to purchase infant formula, rather than breastfeed, it must be assumed that they receive a net economic benefit from that decision. This private gain may take the form of, for example, convenience benefits arising from the use of infant formula.

49. The extent of this lessened competition is, however, difficult to assess. First, it is difficult to predict how marketing and advertising activity would differ under the counterfactual. The Applicant submits that both Members and non-Members may be "pressured to undertake more aggressive marketing during this transition period as a result of a perception that if they did not do so, they would lose market share to competitors that did."[20] However, the Commission also recognises that large multinational suppliers may assume significant global reputational risk from advertising in New Zealand, if such activity is prohibited in their other national markets.[21] This may offset the incentive of those suppliers to market aggressively in New Zealand.

50. Secondly, it is difficult to assess the potential impact that an increase in advertising and marketing could have on breastfeeding rates. To date, no party has been able to point to any robust evidence directly assessing the impact of marketing activities on the consumption of infant formula.[22]

51. Even though the Commission is unable to quantify the specific changes in demand for infant formula that may arise from the introduction of advertising, some increase in demand is likely to occur under the counterfactual scenario. Therefore, there is likely some lessening of competition under the Arrangement. As such, the Commission must assess whether the Arrangement would result, or be likely to result, in such benefit to the public as to outweigh any lessening of competition.

Assessment of benefits and detriments

General approach

52. Industry participants consistently acknowledge that breastfeeding is important for both maternal and infant health.[23] Consequently, it is widely accepted that there are likely to be significant public health benefits arising from breastfeeding.

53. On a qualitative level, the Commission therefore considers that any competitive detriments arising from infant formula marketing and advertising restrictions are, in this case, likely to be outweighed by the public health benefits. In reaching this view, the Commission has placed significant weight on discussions with industry participants, as well as submissions received from the public.[24]

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20 The Application at [110]. See also the Application at [114], where the Applicant notes similar potential difficulties in refusing requests for free samples.

21 For example, see the Burgess and Quigley report at 60.

22 The Burgess and Quigley report at 22 notes that the United States is one of the few developed countries to take no action in implementing the WHO Code. While a comparison of 2013 statistics from the Center for Disease Control and Prevention in the United States and the Royal New Zealand Plunkett Society does suggest that exclusive breastfeeding rates at three months of age are approximately four percentage points lower in the United States than in New Zealand, it is difficult to conclusively attribute that difference to the presence of marketing.

23 For example, see MOH, *Implementing and Monitoring the International Code of Marketing of Breast-milk Substitutes in New Zealand: The Code in New Zealand*, Wellington, MOH, 2007.

24 For example, the Women's Health Action Trust submitted that "it is in New Zealand's health and economic interests to protect breastfeeding in any way possible by limiting the marketing of infant formula" (Women's Health Action Trust, Submission on Infant Nutrition Council application, 24 January 2015). Also, the New Zealand College of Midwives submitted that "breastfeeding is economically beneficial in regards to population health

54. Nevertheless, the Commission has a responsibility to quantify benefits and detriments, where practicable and appropriate.[25]

55. For the purposes of this Application, the Commission has focused on two major categories of benefits likely to result from authorisation:

    55.1 avoided regulatory costs, to the extent that self-regulation is less expensive than a legislative response; and

    55.2 avoided healthcare costs, arising from higher breastfeeding rates.

56. The Commission has also identified two major categories of detriments likely to result from reduced sales of infant formula under authorisation:

    56.1 lower producer surplus; and

    56.2 lower consumer surplus.

Assumptions

57. In attempting to quantify the likely benefits and detriments arising from the Application, the Commission has made a number of simplifying assumptions.[26] Because of the uncertainty inherent in many of these assumptions, the Commission has also undertaken a variety of sensitivity testing, included in Attachment A.

58. As discussed above, one area of considerable uncertainty is the amount of time before which the Government would enact legislation. For purposes of simplicity, the Commission has adopted the shortest period that would be included under the counterfactual (two years), while also considering a range of up to eight years in Attachment A.

59. Due to uncertainty around the magnitude of any changes in breastfeeding rates that would arise from increased advertising under the counterfactual, the Commission has simply assessed the relevant benefits and detriments on the basis of a 1% point decrease in the breastfeeding rate.[27] However, the Commission has also considered the effects of breastfeeding rates ranging from no change, up to a 4% point decrease.[28]

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protection" (New Zealand College of Midwives, Submission on Infant Nutrition Council application, 14 January 2015).

25 *Authorisation Guidelines* at [49]. The level of detail in the quantification exercise will, however, vary as appropriate for each case.

26 A spreadsheet containing the Commission's underlying benefit and detriment calculations can be made available upon request.

27 Breastfeeding rates refer to both 'full' and 'exclusive' breastfeeding, as per the terminology used by the Royal New Zealand Plunket Society. 'Partial' breastfeeding has not been included. See "Annual breastfeeding statistics", Royal New Zealand Plunket Society at https://www.plunket.org.nz/news-and-research/research-from-plunket/plunket-breastfeeding-data-analysis/annual-breastfeeding-statistics/.

28 The lower bound was set at zero, as increased infant formula advertising is unlikely to have a reverse effect of increasing breastfeeding rates. The upper bound was set based on the current difference between United States and New Zealand breastfeeding rates. See footnote 22.

60. Consistent with the New Zealand Treasury, the Commission has adopted a default discount rate of 8% for all future impacts.[29]

Benefits

Avoided incremental regulatory costs

61. The counterfactual envisages eventual legislation sponsored by the MOH. Enacting such legislation would impose societal costs, including the time and resources spent by Parliament and policy agencies.

62. A study carried out by the University of Otago estimated the average cost of enacting new public health legislation in New Zealand to be around $3.5 million.[30] The present value of this cost, if incurred after a period of two years, is approximately $3.2 million. Avoiding this cost generates a public benefit, as these resources could be productively deployed elsewhere.

63. This benefit of avoided 'gross' regulatory costs must be offset against the costs that would be incurred under the factual scenario by the INC in administering the INC Code, and by infant formula suppliers in complying with it.

64. The Commission considers that the INC likely incurs slightly higher regulatory costs under the factual scenario than it would under the counterfactual. The Commission's understanding is that the time spent by the INC on administering the INC Code equates to something on the order of half of a full-time equivalent employee.[31] Assuming an average salary, the Commission estimates the present value of this over a two year period to be less than $0.1 million.[32]

65. Avoidable 'in-house' compliance costs incurred by infant formula suppliers under the factual scenario are likely negligible. Multinational suppliers incur the vast majority of these expenses, and the existence of their compliance programs is not conditional on the existence of the Arrangement within New Zealand. Similar regulatory requirements in other jurisdictions, primarily Australia, suggest that each of these suppliers would still be required to maintain a comparable regulatory compliance program in the absence of the INC Code.[33]

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29 This is consistent with the rate used by the Treasury in public policy cost-benefit analyses. See The Treasury "Cost Benefit Analysis including Public Sector Discount Rates" (2010) at http://www.treasury.govt.nz/publications/guidance/planning/costbenefitanalysis.

30 Nick Wilson, Nhung Nghiem, Rachel Foster, Linda Cobiac and Tony Blakely "Estimating the cost of new public health legislation" *Bull World Health Organ* 2012; 90:532-539. This study applied a method developed by the WHO for costing the implementation of new laws in the health sector. The study also estimated a 95% uncertainty interval for the cost of legislation of $2 million to $5.9 million. Note US$ figures in the study were converted at a rate of US$1: NZ$1.35.

31 Interview with INC, 5 February 2015.

32 The average New Zealand salary is $51,532, see Statistics New Zealand "New Zealand Income Survey: June 2014 quarter" at http://www.stats.govt.nz/browse_for_stats/income-and-work/Income/NZIncomeSurvey_HOTPJun14qtr.aspx.

33 Interviews with Danone Nutricia Early Life Nutrition, 30 January 2015 and Nestle New Zealand Limited, 29 January 2015.

Improved public health outcomes

66. If one or more members of the INC were to engage in currently-prohibited advertising or promotional activities, use of infant formula could increase at the expense of breastfeeding.

67. The Applicant, as well as several submissions, referred to two studies that have attempted to estimate the public health costs associated with voluntary use of formula for infant nutrition.[34] However, one these studies did not provide sufficient information to gauge the robustness of its estimates.[35]

Modelling of more certain health outcomes

68. The report that appeared to provide robust estimates is a study commissioned by UNICEF UK (the UNICEF Study).[36] The UNICEF Study suggests that there are five illnesses for which the scientific research is sufficiently robust so as to allow the relationship between breastfeeding and impaired health outcomes to be estimated and modelled. These illnesses are:

    68.1 breast cancer;

    68.2 gastrointestinal infection;

    68.3 necrotising enterocolitis;

    68.4 lower respiratory tract infection; and

    68.5 acute otitis media.

69. The UNICEF Study estimated the relationship between the prevalence of these illnesses and the rate of breastfeeding, which allowed for an estimation of the costs to the UK health system that could be avoided by higher levels of breastfeeding.

70. The Commission has converted these costs into New Zealand equivalents, based on effective average purchasing power parity exchange rates during the relevant period.[37] The Commission has also compared these estimates with those from alternative sources, where available and applicable.[38]

71. The Commission multiplied the estimated health care costs for an individual treatment by the number of additional treatments expected under the counterfactual. In relation to breast cancer, this analysis incorporates not only estimated treatment costs, but also the

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34 This is distinct from non-voluntary infant formula use due to, for example, maternal or infant medical conditions.

35 Melissa Bartlick and Arnold Reinhold, "The burden of suboptimal breastfeeding in the United States: a pediatric costs analysis", *Pediatrics* volume 125, number 5, May 2010 at 1048. This study attributed a large proportion of economic benefits to an assumed reduction in cases of Sudden Infant Death Syndrome.

36 Mary Renfrew et al, "Preventing disease and saving resources: the potential contribution of increasing breastfeeding rates in the UK" (report commissioned by UNICEF UK, October 2012).

37 The UNICEF Study utilised United Kingdom data from 2009-2010. The Commission has converted and inflated this data to December 2014 New Zealand currency, based on public foreign exchange and inflation data from the Reserve Bank of New Zealand, as well as purchasing power parity conversion factors from the World Bank. See http://www.rbnz.govt.nz/statistics/ and http://data.worldbank.org/indicator/PA.NUS.PPPC.RF.

38 For example, see Nikki Fisher "Prolonged and exclusive breastfeeding significantly reduces hospital costs" (Paper prepared for UNICEF NZ and the New Zealand Breastfeeding Authority Inc, 2010).

benefit of increased Quality Adjusted Life Years (QALYs) for the mother arising from avoided breast cancer.[39]

72. Table 1 provides, for each illness, the Commission's preliminary estimates of the present value health care costs arising from a 1% point reduction in the New Zealand breastfeeding rate over a two year period.[40]

Table 1: Incremental health care costs

Illness	Incremental cost
Breast cancer	$113,809
Gastrointestinal infection	$30,137
Necrotising enterocolitis	$24,958
Lower respiratory tract infection	$56,679
Acute otitis media[41]	$64
Total	**$225,646**

Source: Commission estimates

73. The Commission therefore concludes that two years of decreased breastfeeding rates would result in an incremental present value cost of approximately $0.2 million for the public health sector to treat increased incidences of these illnesses.

74. These estimates do not, however, attempt to measure the avoided pain and distress that would accrue to the infants and/or their caregivers from contracting these illnesses. To the extent that individuals are risk-adverse, these figures underestimate the harm arising under the counterfactual.[42]

Evaluation of less certain health outcomes

75. The UNICEF Study also identified three other health and developmental impacts potentially arising from higher breastfeeding rates, but for which the available evidence was not sufficiently robust for full estimation. These include:

75.1 reduced incidences of Sudden Infant Death Syndrome (SIDS);

75.2 higher cognitive outcomes; and

75.3 reduced obesity.

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39 The UNICEF Study employed a QALY of £20,000, which equates to approximately $38,000. The Commission considers this to be sufficiently aligned with the general rule for health funding, which is to consider a QALY gained for less than GDP per capita ($45,000) as cost effective. See Rachel Webber-Foster, Giorgi Kvizhinadze, Gareth Rivalland and Tony Blakely "Docetaxel and Paclitaxel in Brest Cancer: comparing the cost-effectiveness of different taxane regimens" (2014) University of Otago at http://www.otago.ac.nz/wellington/otago073974.pdf.

40 On average, 61,548 infants have been born annually in New Zealand over the past five years. Consequently, a 1% reduction in the breastfeeding rate equates to 615 infants per year.

41 Unlike the other illnesses listed here, infants are only uncommonly admitted to hospital following a clinical diagnosis of otitis media. Consequently, this cost figure for acute otitis media only incorporates visits to general practitioners (see UNICEF Study at 49).

42 These estimates also do not include any allowance for loss of productivity as a result of time taken off work by caregivers to attend to ill infants.

76. Because the strength of the link between these outcomes and breastfeeding is uncertain, the UNICEF Study only considered indicative approximate estimates ('narrative analysis'), based on assumed relationships. The Commission has used a similar approach.

77. The UNICEF study suggested that the incidence of SIDS could be reduced by 1%, if the rate of exclusive breastfeeding during the two months after birth were to experience a modest increase. Although the UNICEF Study does not define what it considers to be a 'modest increase', the Commission considers that it is prudent to assume that the authors employed an increase that is larger than the relatively small change in breastfeeding being considered here. Consequently, the Commission has applied a conservative approach, adopting a 0.15% point reduction instead.[43]

78. On average, there are around 32 SIDS cases a year in New Zealand.[44] Using the Ministry of Transport's $3.95 million estimate of the Value of Statistical Life,[45] such a reduction in SIDS would generate an estimated benefit of $0.3 million over a two year period.

79. The UNICEF Study also outlined evidence suggesting that breastfeeding leads to improved cognitive outcomes. Specifically, the study estimated that breastfeeding for a minimum of two to three months may lead to an increase of one or two IQ points, which could in turn lead to increased lifetime earnings. Whilst this implies that changes in the breastfeeding rate may have the potential to generate substantial direct economic returns, the Commission does not have the evidence necessary to estimate this effect with sufficient confidence.

80. Similarly, an indicative relationship between breastfeeding and childhood obesity was suggested in the UNICEF Study. While a reduction in obesity could also result in substantial healthcare cost savings, the study acknowledged that it is not clear how long any protective effect of breastfeeding may last.[46] If such an effect lasts only as long as breastfeeding occurs, the obesity-related benefits of breastfeeding may be relatively small. Because of this uncertainty the Commission has not attempted to estimate possible obesity-related benefits.

81. Finally, the UNICEF Study outlined a further eight illnesses which may correlate with breastfeeding, but for which the evidence is not sufficiently robust to inform an economic analysis. These include:

    81.1 ovarian cancer (in mother);

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43 The smallest increase considered in the UNICEF Study is under "Policy B1", which assumes a 6.5% point increase in exclusive breastfeeding at the age of six months. If this were assumed to be their view of a 'modest increase', then a 0.15% point increase in incidences of SIDS may be broadly appropriate under a 1% point increase in breastfeeding rates.

44 National Mortality Collection, sourced from NZ Child & Youth Epidemiology Service "Infant Mortality and Sudden Unexpected Death in Infancy" at http://www.nzchildren.co.nz/infant_mortality.php.

45 The Value of Statistical Life is based on the estimated average amount of money that members of the New Zealand public would be willing to pay for a safety improvement that result in the expected avoidance of one premature death. Current value sourced from the Ministry of Transport "Social Cost of Road Crashes and Injuries Report overview" (2015) at http://www.transport.govt.nz/research/roadcrashstatistics/thesocialcostofroadcrashesandinjuries/report-overview/.

46 The UNICEF Study at 73.

81.2 Type 2 diabetes (mother);

81.3 asthma;

81.4 diabetes;

81.5 leukemia;

81.6 coeliac disease;

81.7 cardiovascular disease; and

81.8 sepsis.

82. Due to insufficient evidence linking these illnesses with breastfeeding, the Commission has not attempted to model any potential positive public health impacts associated with reduced incidence of these illnesses.

Detriments

Lost producer surplus

83. If infant formula sales were to increase under the counterfactual, infant formula suppliers would experience increased returns (ie increased producer surpluses). Equivalently, lower sales levels under the factual scenario constitute a detriment of authorisation.

84. The Commission has estimated that a 1% point decrease in the breastfeeding rate would imply around 615 more infants each year being fed with infant formula. Based on an assumed average revenue per infant of $885 from formula feeding[47] and a 20% profit margin on sales (net of additional advertising expenditure),[48] the present value of this loss of producer surplus over a two year period is approximately $0.2 million.[49]

Lost consumer surplus

85. Reduced sales of formula under the factual scenario may also entail a reduction in total consumer surplus. Restrictions on advertising could mean fewer sales, because potential consumers are less aware of the benefits they might obtain from formula feeding. Advertising may therefore generate net benefits for potential consumers, if it corrects inaccurate assumptions held by individuals about formula feeding.

86. In the absence of reliable data on individuals' willingness to pay for infant formula, however, the magnitude of any lost consumer surplus is extremely difficult to estimate. In this case, the Commission has not been able to quantitatively estimate this impact with a sufficient degree of confidence.

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47 Commission estimates based on industry feedback on typical consumption, the average cost of infant formula, and related equipment cost.

48 Estimate based on operating margins, as reported by industry parties. For example, see Nestle S.A, Half-Yearly Report January – June 2014; and Nutrition and Danone 2014 Interim Financial Report for the six months ending June 30, 2014.

49 If advertising restrictions result in less competitive pricing, this lost surplus could be offset by higher profit margins under the factual. However, as discussed above, the Commission's preliminary position is that there is unlikely to be any significant difference in prices between the difference scenarios.

Balancing benefits and detriments

87. The Commission's quantification of the benefits and detriments of authorisation, based on a two year period before legislation, is summarised in Table 2.[50]

Table 2: Summary of benefits and detriments (two year period)

Impacts	Change in breastfeeding rate		
	No change	**1%**	**4%**
Avoided net regulatory costs	$3.2 million	$3.2 million	$3.2 million
Avoided health costs	$0	$0.2 million - $0.6 million	$0.9 million - $2.3 million
Quantified benefits	**$3.2 million**	**$3.4 million - $3.8 million**	**$4.1 million - $5.5 million**
Lost producer surplus	$0	$0.2 million	$0.8 million
Lost consumer surplus	$0	unquantified	unquantified
Quantified detriments	**$0**	**$0.2 million**	**$0.8 million**
Quantified net benefit	**$3.2 million**	**$3.2 million - $3.6 million**	**$3.3 million - $4.7 million**

Source: Commission estimates.

88. Based on a two year period before legislation, as well as a 1% point decrease in the breastfeeding rate under the counterfactual, the total quantified benefits of authorisation range from $3.4 million to $3.8 million, depending on whether potential benefits from avoided SIDS deaths are included. In comparison, total quantified detriments of authorisation are approximately $0.2 million.

89. For authorisation of the INC Code to generate a net detriment, the unquantified impact on consumer surplus would have to exceed the quantified net benefit. In other words, advertising in the counterfactual scenario would have to increase consumer willingness to pay by approximately $2,600 to $2,900 per affected infant. Even at the low end of the range, this represents almost three times more than the current cost for six months of infant formula and the associated equipment. The Commission's preliminary view is that advertising is unlikely to alter individuals' willingness to pay by such a magnitude.

Draft Determination

90. The Commission's Draft Determination is that the Arrangement will result, or be likely to result, in such a benefit to the public that it should be permitted. Therefore, the Commission proposes to grant an authorisation for the Arrangement under section 58 of the Act.

[50] Complete tables summarising impacts over different time periods are included in Attachment A.

Attachment A: Sensitivity analysis

A1. If the counterfactual were to lead to no discernible differences in breastfeeding rates, the Commission's preliminary position is that the only likely impact of authorisation is the benefit of avoided regulatory costs.

A2. The Commission recognises the possibility that eventual legislation may more closely adhere to the WHO Code, and therefore be more onerous than the INC Code. However, if breastfeeding rates are assumed to be relatively unresponsive to the removal of the advertising restrictions in the Code, then the precise character of eventual legislation is also unlikely to have a significant impact on the expected benefits and detriments.

A3. In contrast, if breastfeeding rates were more significantly impacted under the counterfactual, then authorisation would result both in larger benefits from avoided healthcare costs, and also larger detriments from reductions in producer and consumer surplus. However, since these benefits and detriments would be affected proportionally, there is unlikely to be any difference in the net impact.

A4. These different scenarios are outlined in the tables below.

Table A1: Summary of quantified impacts (two year period)

Impacts	Change in breastfeeding rate		
	No change	**1%**	**4%**
BENEFITS			
Avoided net regulatory costs	$3,207,480	$3,207,480	$3,207,480
Avoided illness costs	$0	$225,646	$895,742
Avoided SIDS costs	$0	$344,609	$1,378,436
Total quantified benefits	**$3.2 million**	**$3.4 million - $3.8 million**	**$4.1 million - $5.5 million**
DETRIMENTS			
Lost producer surplus	$0	$194,268	$777,070
Total qualified detriments	**$0**	**$0.2 million**	**$0.8 million**
Total net benefit	**$3.2 million**	**$3.2 million - $3.6 million**	**$3.3 million - $4.7 million**

Source: Commission estimates.

Table A2: Summary of quantified impacts (four year period)

Impacts	Change in breastfeeding rate		
	No change	1%	4%
BENEFITS			
Avoided net regulatory costs	$2,689,095	$2,689,095	$2,689,095
Avoided illness costs	$0	$419,102	$1,663,697
Avoided SIDS costs	$0	$640,056	$2,560,223
Total quantified benefits	**$2.7 million**	**$3.1 million - $3.7 million**	**$4.4 million - $6.9 million**
DETRIMENTS			
Lost producer surplus	$0	$360,821	$1,443,282
Total qualified detriments	**$0**	**$0.4 million**	**$1.4 million**
Total net benefit	**$2.7 million**	**$2.7 million - $3.4 million**	**$2.9 million - $5.5 million**

Source: Commission estimates.

Table A3: Summary of quantified impacts (eight year period)

Impacts	Change in breastfeeding rate		
	No change	1%	4%
BENEFITS			
Avoided net regulatory costs	$1,863,636	$1,863,636	$1,863,636
Avoided illness costs	$0	$727,154	$2,886,563
Avoided SIDS costs	$0	$1,110,516	$4,442,063
Total quantified benefits	**$1.9 million**	**$2.6 million - $3.7 million**	**$4.8 million - $9.2 million**
DETRIMENTS			
Lost producer surplus	$0	$626,035	$2,504,138
Total qualified detriments	**$0**	**$0.6 million**	**$2.5 million**
Total net benefit	**$1.9 million**	**$2.0 million - $3.1 million**	**$2.2 million - $6.7 million**

Source: Commission estimates.

A5. The Commission's preliminary view is that, with the Arrangement in place, there is likely to be significant net public benefits. While the exact magnitude of these benefits may vary, these benefits likely outweigh any reasonable estimate of the competitive detriments.

A6. In particular, the Commission is of the view that marketing and advertising would have to significantly alter consumers' willingness to pay for infant formula in order for the likely

detriments to outweigh the likely benefits. The Commission considers that unimpeded advertising is unlikely to have an impact of the required magnitude.