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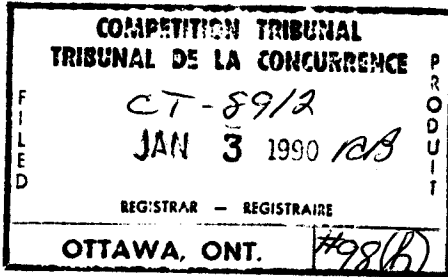
(Respondent)

IN THE MATTER OF an Application by the Director of Investigation and Research under Sections 79 and 77 of the Competition Act, R.S.C. 1985, c. C-34 as amended;

AND IN THE MATTER OF The NutraSweet Company.

B E T W E E N :

The Director of Investigation and Research



Applicant
(Respondent)

- and -

The NutraSweet Company

Respondent
(Appellant)

JOURNAL DE LA CONCURRENCE

File No. CT-89/2
 Director NutraSweet
 Exhibit No. R-20-A
 No. de la pièce
 Filed on Feb. 16/90; 14 h06
 Déposé le
 Registrar A. Lague
 Greffier

- and -

Tosoh Canada Ltd.

Intervenor

AFFIDAVIT

I, Frank Mathewson, of the City of Toronto, in the Municipality of Metropolitan Toronto, make oath and say:

1. I am the author of expert evidence in the within application. The expert evidence I have produced herein is, in my opinion, correct and accurate.

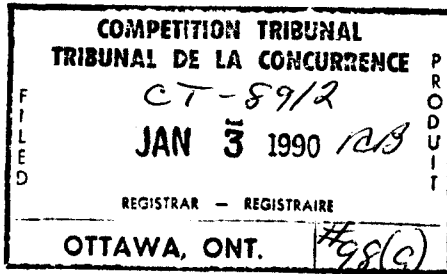
SWORN BEFORE ME at the City of)
 Toronto, in the Municipality of)
 Metropolitan Toronto)
 this 22nd day of December, 1989)

Frank Mathewson

Frank Mathewson

Bernie Donnelly

 A Commissioner, etc.



ECONOMIC EVIDENCE IN THE MATTER OF THE DIRECTOR
OF INVESTIGATION AND RESEARCH AND THE NUTRASWEET COMPANY
UNDER SECTIONS 79 AND 77 OF THE COMPETITION ACT

Expert Evidence of

Frank Mathewson

Department of Economics &
 Institute for Policy Analysis
 University of Toronto
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CT-89/2
 Director: *Nutrasweet*
 R-20-C
 Filed on: *Feb. 16/90; 14206*
 Registrar: *S. Lopez*

December 22, 1989

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I. **MANDATE**

1. I have been requested by The NutraSweet Company (NSC) and its counsel (Lang Michener Lawrence & Shaw) to analyze the principal economic issues involved in the Application of the Director of Investigation and Research (the Director) against NSC, dated June 1, 1989. This report presents this analysis.

2. My analysis is based on my professional training and experience as an economist in the field of Industrial Organization and my understanding of the basic facts involved in this litigation as set out and referred to below. My understanding of the facts derives from my review of the Application and Response, from several discussions with NSC personnel and its counsel, from a review of the written evidence of James Fry and from a review of various documents produced in these proceedings.

3. I hold an appointment as a Professor of Economics in the Department of Economics and as a Research Associate in the Institute for Policy Analysis, both at the University of Toronto. My professional qualifications are set out in my curriculum vitae, which is appended to this report.

II. INTRODUCTION

4. Section III of this report summarizes my understanding of the principal facts of this case relevant to my economic analysis. Section IV sets out my findings. Section V analyzes the nature of competition in a market among supplying firms when exchange is controlled by contract as contrasted with simple price-mediated exchange. NSC¹ sells its aspartame under contracts. It is these contracts that are at issue in this case. Section V describes the nature of competition through contracts as opposed to spot markets. Section VI analyzes the nature of competition and aspects of the relevant market to this case. Section VII analyzes the competitive benefits that accrue from the current form of distribution of aspartame in Canada. Section VIII addresses the economics of non-price competition. Finally, Section IX sets out my opinion as to the appropriate measures of cost for evaluating the pricing policies of NSC in Canada.

III. RELEVANT FACTS

5. NSC made important inventions relating to aspartame and held a patent in Canada giving it the exclusive right to sell aspartame in Canada until July, 1987.

¹ In this report "NSC" is used to refer to The NutraSweet Company, and "NutraSweet" to the brand of aspartame sold by NSC.

6. At regular intervals that may vary by customer, NSC negotiates contracts with users of its aspartame (NutraSweet). These contracts may vary by customer with respect to quantities, price and other provisions in the contract. This proceeding concerns the contracts that have been in force between NSC and its customers since the expiration of the Canadian patent in 1987.

7. Aspartame has been sold commercially in Canada since 1981.

8. Aspartame had to overcome a legacy of significant safety concerns left with consumers, customers and governments by saccharin and cyclamates. Aspartame also had to overcome a public perception that sweeteners other than sugar did not taste good.

9. There is substantial sweetener research occurring internationally, especially in high potency sugar substitutes that will compete directly with aspartame.

10. Most of NSC's contracts with its customers are 1 year and none is longer than 4 years.

11. Most NSC customers, and all of its major customers, produce more than one product line. Some of the contracts negotiated between NSC and its customers include exclusive dealing provisions whereby the customer agrees not to use any substitute aspartame other than NutraSweet, or other sweeteners, in the same product line. NSC contracts may provide

larger volume customers with lower per unit prices. As well, NSC offers a trade mark display allowance, in the form of a reduction in wholesale price, to customers who purchase all of their aspartame needs for any single product exclusively from NSC. Doing so enables the display of the NutraSweet trade mark logo unit (a swirl) on the package of the end product and entitles the customer to the reduction in the wholesale price.

12. NSC contracts may also contain, at the behest of particular large customers, a meet-or release clause and a most-favoured-nation clause. Inclusion of a meet-or-release clause requires NSC during the course of any contract either to meet any competitive offer for a non-trivial quantity of aspartame received by the customer from a competing supplier of aspartame or to release the customer to the extent of that volume from their contract with NSC. Inclusion of a most-favoured-nation clause requires NSC during the course of the contract to supply NutraSweet to the customer on an equivalent price basis as that of any competing customers who would otherwise receive a lower price.

13. Some customers of NSC have rights specified in their contracts to demand additional aspartame at their contract price up to specified limits. For example, a contract may specify that a customer may demand up to an additional 20% of the contracted quantity. These clauses facilitate the expansion of output by a customer in response to uncertain fluctuations in the demand for the end product of the customer.

14. Aspartame is an intense or high potency sweetener as compared to the sweetening capacity of a comparable volume of sugar. Other high potency sweeteners include saccharin (once widely available on the market but currently banned in Canada except in drugstores) and cyclamates. Other notable sweeteners include sucrose and high fructose corn syrup (HFCS). Sucrose is traded on a spot and a futures market; HFCS can be secured through forward contracts but no organized trading exists in these contracts.

15. By seeking permission of appropriate governmental agencies for new product applications, NSC has been able to persuade an increasing number of food producers to use aspartame for an increasing type and number of products. Soft drink manufacturers including, in particular, Coke and Pepsi, are major users of aspartame in their various brands of diet soft drinks. Aspartame cannot currently be used in baked goods as its current form in the market breaks down under heat.

16. There are several producers of aspartame in the world. Currently in Canada, aspartame is distributed principally by two firms: NSC which either makes the aspartame directly or under contract with other producers and distributes it in Canada; and Tosoh Canada Ltd. (Tosoh) which distributes in Canada aspartame made by the Holland Sweetener Company (HSC) in the Netherlands.

17. The lead time typically required for an existing fine chemical plant to be converted to the production of aspartame is approximately 1 year.

The lead time required to build a new production facility (from the ground up) for aspartame requires approximately 2 years. For past producers who have (temporarily) ceased producing aspartame, the time required to resume aspartame production is considerably shorter. It is relatively easy to move fine chemical capacity into and out of the production of aspartame.

18. NSC markets and distributes NutraSweet in Canada through a branch office with 10 or 12 employees. While, to a minor extent, some functions associated with this distribution are served by personnel at NSC corporate headquarters in Deerfield Illinois, none of those expenses incurred in the U.S. would be reduced if NutraSweet were not sold and distributed in Canada, or if NutraSweet were withdrawn from the Canadian market.

IV. SUMMARY

19. Based on my understanding of the facts and my analysis, and as elaborated below, I believe that NSC's contractual practices referred to in paragraphs 10 to 13 above are pro-competitive. In particular, it is my opinion that those clauses in NSC's contracts with its customers are efficiency enhancing. By efficiency enhancing, I mean that NSC's contracts encourage the production and distribution of aspartame in a manner that leads to benefits for both intermediate producers using

aspartame in their products and the ultimate consumers. I believe that NSC's contracts protect brand name investment in the NutraSweet trade mark, encourage the efficient provision of NutraSweet when components of demand are uncertain, and generally lead to lower prices for aspartame. It is my opinion that in general, trade marks can be valuable economic assets that signal product quality and consistency to consumers, and that they reward and encourage efforts to serve consumers in these respects. Based on my analysis, it is my conclusion that the appropriate basis for calculating NSC's cost of supplying aspartame to Canada are 'avoidable' or variable costs. These are costs that NSC would avoid if it ceased marketing and distributing NutraSweet in Canada.

V. COMPETITION THROUGH CONTRACTUAL OFFERS

V.1 Features of Exchange

20. To set the stage for my analysis of NSC's contracts in Canada, it is useful to contrast exchange that takes place in anonymous spot markets mediated solely by a market-determined price with exchange that is governed by more complex contracts that include price but can embody other terms and conditions. NSC's sale of aspartame in Canada to its larger customers is conducted through such contracts. The first question is how does such exchange deviate from simple spot market exchange?

21. The typical exchange process analyzed in standard economics textbooks on price theory focuses on the determination of a market-

clearing price where goods are (relatively) homogeneous. In this setting, at the time of sale, producers cannot identify, nor do they care who purchases the product provided that the market-determined price is paid. Because products and their attributes are known, consumers neither identify nor care who produces the product that they purchase. (Some markets have these features and correspond in detail to the textbook characterizations.²) For their part, wholesalers and retailers of a uniform good of known quality are uninterested in the identity of the individual producer. The reason for this is that once the good changes hands from the producer to the wholesaler or retailer, the seller has no continuing profit interest in the product. With known products of a known and uniform quality, revenues realized from the sale of the good capture completely all of the return from the production efforts. These textbook conditions, however, do not describe all economic exchange.

22. Many markets are not restricted to these features. For example, the sale of NutraSweet in Canada deviates from these simple market conditions. In contrast to spot exchange, contractual exchange can be specific to clients. Contracts of sale are not uniform: they may vary in terms of the conditions on the use of the good and the use of other substitutes or complements for the good by the purchaser; they may impose conditions on the seller; they may vary in length. The contract may

² For example, agricultural markets are examples of markets that function close to the textbook model. For a standard agricultural product, individual producers cannot identify either ultimate consumers or even the wholesalers and retailers that bring the agricultural goods to markets. Provided the agricultural good meets certain standards, consumers do not care about the identity of the individual producer.

embody not only purchase prices and conditions, but terms relating to the subsequent use of this good and other substitute products during the term of the contract. The seller may have an interest in the use of the good even though ownership rights in the commodity were transferred to the buyer at the time of sale and payment. This interest reflects a return to the seller from the actions of the buyer in using the commodity. That is, the seller has a profit interest in the product even though ownership in the good has been transferred from the seller to the buyer. (I believe that NutraSweet fits this model.) At the very least, deviations in exchange conditions from the simple textbook model represent some deviation from the assumptions of uniform products and quality exchanged once and for all with known conditions of demand and usage.

23. Deviations from the simple textbook model are plentiful in a modern economy such as Canada's. For example, some contracts between sellers and buyers restrict the buyer to use the good to the exclusion of all substitute products.³ Further, these contracts may include co-operative advertising programmes and may even specify for retailers minimum quantities of product that must be sold each time period, or minimum levels of product inventories that must be maintained. Nor are these terms all of the deviations. Frequently, retailers purchase according to wholesale price schedules which incorporate volume rebates. These changing wholesale price schedules do not indicate market imperfections, but instead usually reflect lower unit costs for manufacturers in their

³ Ford dealers are not permitted to sell General Motors' cars; McDonald's outlets cannot sell Burger King's line of food products.

dealings with their larger volume dealers and the enhanced bargaining power of large volume dealers against the individual manufacturer. Sellers and buyers in their contractual negotiation choose from among a menu of possible conditions. With freely negotiated contracts and outside options for both parties, contractual monetary terms reflect the other terms agreed to at the same time between the parties. In return for accepting terms on their input or product choices, parties to a negotiated contract bargain for compensating variation elsewhere in the contract. The point is that the types of terms in NSC's contracts for the supply of aspartame are common to many freely negotiated business transactions in Canada.

V.2 **The Impact of Trade Marks**

24. An additional feature common to many of these contracts is that the product of the seller is usually identified by a trade mark or brand name. Products identified with a specific manufacturer or retailer involve the reputation of that economic agent, and reputation represents a valuable investment by the party. This holds for the NutraSweet trade mark as well.

25. Each manufacturer expects to receive a return for this investment, else the investment would not be made. One potential difficulty with the corresponding stream of revenues that constitutes the return on the investment is that the firms using the manufacturer's products can influence the size of the manufacturer's return. Shoddy final products

delivered to the consumer will damage sales and erode the return to the manufacturer's investment in its reputation.

26. Manufacturers of goods use trade marks as short-form symbols of their products. The trade mark is usually highly visible and can be easily ascertained by the purchaser. The trade mark signals to the consumer that the product meets the standards represented by the trade mark and, to maintain its value, the trade mark must convey a consistent signal of product quality and be consistent with the consumer's past experience with the product.

V.3 Contractual Exchange Similar To NSC's Contracts is Common

27. As a general matter, contracts with terms and conditions similar to those in NSC's contracts are common. For example, most franchise contracts have some proportion of the contractual and marketing attributes outlined above. Estimates are that approximately 40% of gross domestic sales in the U.S. are conducted through franchised outlets. While there are no data available, I anticipate a similar percentage of Canadian domestic sales occurs through franchised outlets as well.

28. Just as consumer assurance and efficient production and distribution are the motives for the myriad of contractual conditions in general franchise contracts, there is every reason to accept that these same motivations apply in the case of aspartame produced either directly or

indirectly through contract and then distributed by NSC in Canada and elsewhere in the world. An understanding of the contractual terms in NSC's Canadian contracts is promoted through an appreciation of the extent of contractual terms at work in many contracts involving vertical exchange and the economic rationale in general for these restrictions. NSC sought to negotiate contracts which accommodated particular features of its product and facilitated the introduction of its product into the sweetener marketplace.

29. The critical questions are what accounts for these restrictions and what are the effects of these terms of supply: anti-competitive, "dominant" market behaviour as argued by the Director or pro-competitive market behaviour emanating from the competitive discipline to evolve efficient forms of production and distribution, as argued by NSC. In contrast to the former, the latter yields benefits to the marketplace: it has facilitated NSC's entry into the market, it has promoted aspartame as a product, and it permits NSC to compete as a corporate entity and to deliver benefits to the ultimate consumers of food products using NutraSweet.

VI. THE NATURE OF COMPETITION AND ASPECTS OF THE RELEVANT MARKET**VI.1 Substitutability Among Sweeteners**

30. The written evidence of James Fry demonstrates that there is substitutability across refined sugar (sucrose), HFCS and a variety of high potency sweeteners. This substitutability varies by end use. In some uses, there is no substitutability; in others, the degree of substitutability is considerably higher. For example, while aspartame cannot currently be used in baked goods, it can be and is used extensively in soft drinks and other products. Estimates by Fry of cross-price elasticities between cyclamates and aspartame in Table-top use are in the range of .34 and between sugar and aspartame in soft drinks are in the range of .14. (These are reported in Schedule 12 of Fry's evidence.) While Fry qualifies these estimates because of the unavailability of data to permit more reliable estimates, these numbers, the best that are known to me, indicate some cross-price effects. For example, the cross-price elasticity between sugar and aspartame in soft drinks indicates that if the price of sugar rises by 10%, the demand for use of aspartame in soft drinks rises by 1.4%. This indicates some but not substantial cross-price effects in this end use. But the price of aspartame is falling to a level at which it represents a lower cost sweetener (per unit of sweetness intensity) than conventionally refined sugar. This will enhance the effect of the two products in cross disciplining each other in the marketplace.

VI.2 Aspartame Component of the Sweetener Industry

31. Even if we focus on the aspartame component of the high potency segment of the sweetener industry, considerable competitive pressure appears. This pressure comes from potential entrants who could sell in Canada with relative ease. In other words, the barriers to entry into the aspartame component of the Canadian market are low. In his evidence (Section I), James Fry lists the current producers of aspartame in the world, including their production capacities⁴, as well as potential new producers of aspartame. Further, he details the costs and time lags for converting fine chemical plants to the production of aspartame or reconverting former aspartame facilities to produce aspartame again. In general, any conversion costs are low and the time lags are short.

32. While many of these plants are outside Canada, the transportation costs per unit of sweetener to move aspartame from the site of production to the Canadian customers' sites are low. Not only are the transportation costs low for aspartame but I understand that there exist several distributors in Canada who could with relative ease distribute aspartame in Canada. Alternatively, a competing manufacturer could establish its own sales force as NSC has done. Aside from the competitive discipline placed on NSC by substitutes for aspartame, both existing and potential, the competitive pressures of potential suppliers under these circumstances would seem to be substantial. The ease of

⁴ I understand that there are currently planned expansions to these capacities.

entry into the production and distribution of aspartame implies that NSC must act competitively to survive.

VII. COMPETITIVE BENEFITS FROM THE ASPARTAME BIDDING PROCESS

VII.1 Trade Mark and Its Effects

33. For the purposes of analyzing the competitive features of the bidding for the sale of aspartame in Canada, I believe that the key features of NSC's contracts and general marketing and distribution strategy are : (i) the use of a branded ingredient marketing strategy (ii) a co-operative marketing program, (iii) volume discounts, (iv) exclusive supply agreements, (v) meet-or-release clauses and (vi) most-favoured-nation clauses. In my opinion, each of these clauses has been and is a rational efficient marketing strategy for the sale of a product such as aspartame and is a reflection of a competitive marketplace. An appreciation of this point follows from an understanding of the sequential market rationale for each of these features.

34. Several features of the specific market segment for high potency sweeteners suggest that the above marketing strategy is reasonable for success. First, prior to aspartame, other high potency sweeteners (saccharin and cyclamates) had been developed and introduced into the market. Serious health concerns were raised regarding both saccharin and cyclamates; and both were characterized as inferior substitutes to sugar

in terms of 'taste' substitutability, even if consumers were willing to consume these inferior substitutes because of the significant reduction in caloric content per uniform serving of product.⁵ In this setting of grave consumer uncertainty regarding high potency sweeteners, NSC's aspartame entered the market under patent with a superior product that tests indicated had no negative health consequences. As a precondition of effective entry and ongoing expansion, NSC had to inform consumers of these health and taste attributes of aspartame. A branded ingredient strategy was a reasonable response to this problem, so that consumers could be certain that NutraSweet was an ingredient in the end product.

35. It should not be surprising if, in order to induce end product producers to aid in the establishment of the NutraSweet brand and swirl, NSC adopted an allowance programme. Manufacturers of soft drinks, for example, already enjoyed the return from successful investment in brand name and trade marks over the years. It would be reasonable for them to require a benefit in return for permitting NSC to include its own logo on their consumer product. Furthermore, it is logical to expect NSC to focus a significant portion of its advertising on the consumer of the final product at the time of purchase and consumption of that product.⁶

⁵ James Fry's evidence (Section B) documents the history of these products and their successes and failures through their product life cycle.

⁶ This advertising strategy is one which extends beyond the food industry. Manufacturers in many industries engage in joint advertising campaigns with retailers. Sometimes an ingredient is separately branded, such as a "Dolby" sound component or a "Teflon" covering for cookware.

VII.2 Uncertainty in the Demand For Aspartame

36. The second feature of the input demand for aspartame is that spot demand, at a particular moment in the future, for each of the principal users of aspartame is uncertain. The principal users at this time are soft drink manufacturers. There are two types of uncertainty that flow from these users. The first uncertainty flows from uncertain demand conditions for soft drinks. Unusually warm summers yield increased demand for soft drinks and correspondingly increased demands for the inputs into these products, such as aspartame. But weather conditions and therefore demands are unknown in advance. The second uncertainty flows from uncertain market shares. For example, producers of soft drinks engage in substantial advertising and their market shares are sensitive to this advertising as well as other factors. It is difficult to forecast accurately their market shares and the relative demand for each product sold.

37. There is a well-developed market for both spot and future sales and purchases of sugar. The market is large; there are several other major product classes that use sugar such as the baking industry. For example, a firm buying and using sugar can buy spot sugar contracts or seek to insulate itself from uncertainty in price movements through futures contracts in a well-developed market. This is not the case for aspartame.

38. At the beginning, NSC enjoyed a patent on the production of

aspartame. Even as this patent ends, the uses for aspartame are fewer than those for sugar. There is no developed anonymous spot and futures market. Buyers can seek longer-term supply contracts with individual suppliers if buyers wish to reduce future uncertainty but these contracts are individualistic and themselves cannot be traded. Both the Coke and Pepsi contracts with NSC contain provisions for additional purchases of aspartame by these companies should their needs warrant additional supplies. This leaves NSC as a supplier of aspartame under uncertain market conditions. The unfolding of events which would stimulate consumer demand for soft drinks would enhance the demand by the soft drink manufacturers for the inputs into their production process. NSC would be obliged to supply this additional demand to the extent of its contractual commitment to do so.

VII.3 Exclusive Supply Arrangements

39. Both the branded ingredient strategy used to introduce aspartame successfully to consumers, and the supply of aspartame under uncertain market conditions, militate in favour of exclusive supply arrangements. First, the development of a brand name requires the protection of that brand name from others who would free ride on the investment in regulatory approvals, information and reputation established by NSC. In the absence of this protection, others could provide product to users and free ride on the NutraSweet brand name. The use of several different suppliers of aspartame for the same product line could reasonably be expected to require more vigilant monitoring by NSC of the use of these

alternative aspartame supplies to ensure that non-NSC aspartame was not used under the NutraSweet trade mark.

40. One efficient way to guarantee the non-adulteration of NSC's supplies of aspartame is to induce customers to use NSC aspartame exclusively in certain product lines. At the present time, the principal existing rival in Canada for NSC aspartame is HSC aspartame supplied through Tosoh. This aspartame, while identified to some extent by a brand name, has lower reputational investment and the free ride potential for each of these major competitors is asymmetrical: Tosoh aspartame can free ride on the brand name investments of the NSC but not the reverse. It should come as no surprise if Tosoh would like to piggy-back on the market and on product development investments made by NSC.

41. The second consideration involves the uncertain demand for aspartame by the principal users and the role played by the NSC is ensuring the delivery of this product. Uncertainty of the demand for NutraSweet in light of the contractual obligations to provide to both Coke and Pepsi additional volume under contractually specified conditions requires NSC to inventory additional product or to guarantee production capacity to manufacture aspartame if demand is forthcoming. These costs are borne by NSC. Given the specialized distribution arrangements for aspartame in comparison to sugar (outlined above), it is likely efficient for NSC as the most developed supplier in the market to absorb this uncertainty. For example, cool summer weather in North America in any given year accompanied by a warmer climate in Europe, should depress the North

American demand for soft drinks and stimulate the European demand. As a world wide specialist in aspartame with an existing distribution network, NSC can more easily direct worldwide supplies away from North America to Europe than requiring Coke and Pepsi to perform the same task. Alternatively, market shares of Coke and Pepsi may be subject to random variation. It is more efficient for NSC as a common supplier of aspartame to provide assurance of supply than to ask the end producers to fulfill this function.

42. Yet, it would be inefficient for NSC to invest in the production and distribution infrastructure to accommodate the uncertainties of demand and then have Coke or Pepsi at the moment of demand play off world-wide suppliers for a lower price. Such opportunistic behaviour by Coke and Pepsi would dictate a lower investment in specific assets to organize an efficient production and distribution network for sudden shifts in the demand for aspartame by users. One method for ensuring against this ex post behaviour by Coke and Pepsi is to seek to guarantee Coke and Pepsi as customers through exclusive dealing contracts for limited periods of time. Doing so is efficient as it leads to the least-cost method for producing and distributing aspartame under uncertain demand conditions. Put differently, if Coke and Pepsi wish to take advantage of the ability of NSC to move supplies either around the world or across users of aspartame to meet uncertain demands, Coke and Pepsi should guarantee a competitive return to NSC for investing in the infrastructure to facilitate this world-wide exchange. Coke's and Pepsi's guarantee of their volumes to NSC is the quid pro quo for NSC's guarantee of supply to

Coke and Pepsi. Limited-term exclusive dealing contracts facilitate this mutual gain from trade.

VII.4 Wholesale Price Benefits From Exclusive Dealing

43. Whatever the motivation for exclusive dealing contracts, the nature of competition among those who use aspartame to manufacture consumer products means that the exclusive dealing contracts most likely result in lower prices for both intermediate and final consumers. It may be that the lower prices for producers of final consumer goods yield more aggressive non-price competition as opposed to significantly lower prices of final consumer goods. Whichever the alternative in the menu of competitive tools used by manufacturers with aspartame as an input, final consumers will be the ultimate beneficiaries.

44. The major users of aspartame are major food or beverage producing corporations. These corporations are multi-national, sophisticated producers and distributors. I understand that NSC and each of these customers bargains assiduously and long over the terms of their contracts. Two of these firms, Coke and Pepsi, have an established, well-known tradition of intense rivalry with each other. Neither is going to accept a contract which will put it in a disadvantageous position with respect to its rival. This has two effects for analyzing NSC's contracts.

45. First, no buyer and user of aspartame is going to accept a contract

arrived at through bilateral negotiation that gives away something to the supplier without something else in return. This means that these buyers accept exclusive dealing arrangements only if they receive some commercial concession of equal or greater value in return.⁷ Just as these buyers and users of aspartame will not accept the NutraSweet trade mark on their end product packaging without a corresponding benefit such as a trademark display allowance, they will not accept exclusive dealing without compensation. That compensation in one way or another is in the form of improved value or, in other words, a lower wholesale price for aspartame. The evidence is that the major aspartame users are those who receive the best terms. As the major customers of NSC, Coke and Pepsi have substantial commercial power to guarantee favorable terms of exchange for themselves. NSC cannot afford to alienate users of this size and importance. For example, I understand that both companies have asked to have terms of their contracts renegotiated through the life of

⁷ Mathewson and Winter (1988) delineate the conditions under which exclusive dealing can lead to efficiency enhancement in a formal economic analysis under simplified assumptions. (Brand names and uncertain demand are not features of this analysis.) The assumptions of the analysis are that (i) there are only two firms supplying some essential intermediate input, (ii) the two firms are different in that they have different costs or their products are not complete substitutes, and (iii) the customers of the firm supplying this input possibly under conditions of exclusive dealing are passive and either reject or accept the supplying firm's contract offers. The general conclusions of this study are that exclusive dealing can be efficiency enhancing if it results in a fall in the wholesale price of the input. The economic intuition behind this result is that if the fall in wholesale price is sufficiently large, it may compensate the ultimate consumer for any reduction in choice. This is most likely to occur, the stronger the substitutability between the two intermediate inputs. The assumption of two actual producers of the intermediate input fits this case; the substitutability of the two forms of aspartame fits the case. The customers of NSC are unlikely to be passive in their contractual negotiation over their supply contracts for aspartame; this enhances considerably the likelihood that exclusive dealing in this setting is pro-competitive.

the contract even though no such right is provided in their respective contracts. I understand further that NSC has always accommodated these requests. This evidence suggests that NSC has not and cannot exercise market power vis a vis its major customers, because of their importance to NSC's business.

46. Furthermore, this reasoning on contractual negotiation between informed parties applies through time as well. Large and sophisticated firms will not accept short-run contracts with beneficial terms if these are overpowered by long-run disadvantages. It is unreasonable to expect that knowledgeable buyers would willingly accept exclusive dealing contracts with terms that restrict actual and potential competition. To do so would leave them disadvantaged in the future.

47. Second, firms in intense rivalry with each other, producing highly substitutable goods, will seek assurances that their rival or rivals have not received better terms on an important input to the manufacturing process. This explains the use of 'meet-or-release' clauses and 'most-favoured-nation' clauses. They exist in contracts because the buyers sought them. Large, powerful and sophisticated multi-national producers are not going to give away either surplus to their suppliers or advantages to their product rivals. Meet-or-release clauses permit each of these firms to be assured that it will secure the lowest price in the market on a spot basis even if a term contract is in force.

Most-favoured-nation clauses permit both Coke and Pepsi to know that neither will be disadvantaged relative to its rival with respect to the

wholesale price of its aspartame.

48. Each of the components of the contracts offered to commercial users of NutraSweet can be seen as a logical extension of this goal of NSC together with other features of the market in which aspartame was purchased and used.

VIII. THE ECONOMICS OF NON-PRICE COMPETITION

49. As one of the principal economic motivations for the contracts negotiated between NSC and its customers is the promotion and protection of the NutraSweet brand name and logo, it is appropriate to comment on the economics of non-price competition. Does a market generate "excessive" non-price competition? What is the economic role of a trade mark? The economics of non-price competition is currently unsettled. Positions on the issue of non-price competition turn on the role of advertising.

50. For example, if consumers are uninformed about the attributes of products and learn only slowly or not at all about these attributes, then advertising may persuade consumers that a good has certain features or levels of quality that are insupportable from the consumer's ultimate experience or from the perspective of an informed consumer. In this sense, advertising may be excessive.

51. There is a second economic hypothesis that leads to claims that advertising can be excessive. This argument requires consumers to evaluate goods differently. In particular, this approach requires consumers whose value of the product is lower to be more susceptible to advertising. That is, consumers whose value of the product is lower must experience the greatest increase in valuation as a result of the advertising. The argument then takes the profit maximizing advertising levels of firms in the market and asks whether these levels will be excessive. Profit maximizing firms advertise until the increment in their revenues from advertising equals the increment in the cost of the advertising. In other words, it pays to advertise until some last consumer is just persuaded to buy the advertised product over some alternative. But, by assumption, these are the consumers who receive the largest boost from advertising in their valuation of the good. These consumers are not the average consumers. On average, consumers would be better off with less advertising. This excess is endemic to advertising decisions in all markets with different consumers.

52. The first approach is inapplicable to aspartame. Consumers may not know the attributes of newly introduced products, such as aspartame, but they are capable of learning quickly and inexpensively about their preferences for aspartame. Whatever the validity and persuasiveness of the second approach, it is inapplicable if consumers are relatively indifferent across alternative end products using aspartame.

53. A different hypothesis on the role of advertising and brand names regards them as a sunk commitment on the part of the firm to deliver a consistent level of quality to consumers. Advertising is an investment by firms to assure consumers of consistent product quality. According to this hypothesis, brand names and reputation created for a single level of quality are not readily transmitted to other goods. Under this approach, firms with brand names will never deliver to the market quality below their reputation. Consumers' experiences that are below their expectations would cause consumers to disregard the brand name and so destroy its value. It is this discipline that forces firms to be truthful in their advertising claims. This approach requires that consumers learn relatively quickly about a product's true quality or claimed attributes. In this setting, trade marks and brand names are valuable investments of firms to signal the quality of their products to the market. False claims are quickly punished. Excessive advertising by a firm would be avoided as wasteful: it would be a drain on a firm's profits with no pay-off for revenues. According to this approach, the firm will advertise precisely that amount required to assure consumers of the quality of its products and no more.

54. Unlike the first two hypotheses, this analysis has features that fit the case of aspartame. For example, there was a need to assure consumers of product quality when previous high potency sweeteners had experienced adverse health claims or when consumer taste experience with these early high potency sweeteners had been largely unfavorable. The NutraSweet brand name and the NutraSweet trade mark does not seem to be readily

transferable to other product lines and so both appear to be sunk commitments to the supply of aspartame by NSC. As I noted above, consumers appear to be able both to sample products sweetened with NutraSweet at a low cost and then to decide readily whether they prefer the product. The potential for consumer deceit appears to be non-existent. In this regard, the advertising and promotion of NSC appears to be efficiency-enhancing.

55. Under these conditions, it is pro-competitive for NSC to take steps to protect its brand name and reputational investment. The failure to protect this investment will erode the incentive to make the investment in the first place.

IX. ASPECTS OF NUTRASWEET'S PRICING POLICIES FOR ASPARTAME IN RELATION TO ITS UNIT COSTS

56. The critical issue on costs concerns the appropriate measure of cost relevant to address questions of the pricing policies of NSC in Canada. In my opinion, the cost or value of the resources saved should NSC decide to terminate supplying NutraSweet to Canada is the appropriate cost measure. Costs that fall into this category are sometimes labelled 'avoidable' or variable costs. Should NSC ever cease operations in Canada, these are the corresponding costs that can be 'avoided' by NSC; these resources can be redeployed in the Canadian economy at their opportunity cost, a market-determined, accurate measure of the value of these resources to Canada. Other cost items are fixed and would not

change under the hypothesis of no NutraSweet sales in Canada.

57. The per kilo variable costs of NutraSweet to its Canadian customers has been calculated by NSC. These calculations appear in Schedule A. The average variable cost of NutraSweet is calculated as the purchase price of Ajinomoto or other third party aspartame including the transportation and transactions cost elements referred to Note 2 to this Schedule. This cost item is then adjusted for (i) duty drawbacks, (ii) royalties owing to Ajinomoto, and (iii) freight and warehousing costs relevant to the volume of aspartame shipped to and sold in Canada. The sum of these items yields an average variable cost figure for the production and shipment of NutraSweet to Canada. In the absence of NutraSweet sales in Canada, these resources could have been redeployed elsewhere. Average variable costs are reported for 1986, 1987, 1988 and estimated for 1989 based on partial data available at the time of calculation.

58. Other costs attributable to the NutraSweet marketed in Canada are the selling and marketing expenses relevant to the Canadian volume. These are described on pages 4 and 5 of Schedule A respectively. Selling expenses include all of the variable costs of personnel, travel, office leasing, trade promotion, consumption studies, product testing, and outside consulting. Marketing expenses include advertising, public relations, consumer promotion, customer relations and market research. If NutraSweet were not sold in Canada, each of these items would have been avoided, a resource saving. The calculations are reported for 1986,

1987, 1988, and 1989.

59. As shown in Schedule A, for each of the four years 1986, 1987, 1988, and 1989, the sum of the relevant avoidable or variable cost items falls below both the average variable price of NutraSweet (net of pricing and marketing allowances and therefore a conservative average price) and the lowest customer price.

References

G. F. Mathewson and R.A. Winter (1988) "The Competitive Effects of Vertical Agreements: Comment," American Economic Review, 77(5): 1057 - 1062.

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Program Committee, Conference on Industrial
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Association, 1982.

Program Committee, European Association for
Research in Industrial Economics, 1983 - 87.

Publications:

"A Consumer Theory of Demand for the Media", Journal of Business, 45(2),
April 1972: 212-224.

"A Note on the Price Effects of Market Power in the Canadian Newspaper
Industry", Canadian Journal of Economics, 5(2), May 1972: 298-301.

"Metering Costs and Marginal Cost Pricing in Public Utilities", with
G.D. Quirin, Bell Journal of Economics, 3(1), May 1972: 335-339.

Cents and Nonsense: The Economics of Canadian Policy Issues with J. Carr
and J. McManus, Holt, Rinehart and Winston, 1972, 124 pages.

"Price Effects of Market Power in the Canadian Newspaper
Industry: Reply", Canadian Journal of Economics, 7(1), February
1974: 130-132.

"Economies of Scale in Financial Institutions: A General Model Applied to Insurance" with P. Halpern, Journal of Monetary Economics, 1(2), April 1975: 203-220.

"The Benefits and Costs of Rate of Return Regulation" with J. Callen and H. Mohring, American Economic Review, 66(5), June 1976: 290-297.

"Economies of Scale in Financial Institutions: Reply" with P. Halpern, Journal of Monetary Economics, 3, 1977: 127-131.

"The Residential Demand for Electrical Energy and Natural Gas: A Model Estimated for Canada" with R. Hyndman and Y. Kotowitz in W.T. Ziemba et al (eds.), Energy Policy Modelling: United States and Canadian Experiences, Martinus Nijhoff Press, 1980, pp.86-102. (Paper presented at the Canadian Energy Policy Modelling Conference, Vancouver, 1978.)

Economics of Fiscal Transfer Pricing in Multinational Corporations with G.D. Quirin, University of Toronto Press (Ontario Economic Council Research Studies), 1978, 208 pages.

"Some Issues on Public Advertising" with Y. Kotowitz, Journal of Contemporary Business, 7(4), 1979: 123-124.

"Informative Advertising and Welfare" with Y. Kotowitz, American Economic Review, 69(3), June 1979: 284-294.

"Advertising, Consumer Information and Product Quality" with Y. Kotowitz, Bell Journal of Economics, 10(2), Fall 1979: 566-588. (Paper presented at the European Econometric Society Meetings, Geneva, 1978).

Information, Entry and Regulation in Markets for Life Insurance, University of Toronto Press (Ontario Economic Council Research Studies), 1982, 117 pages.

"An Economic Theory of Union-Controlled Firms" with Y. Kotowitz, Economica, 49 (196), November 1982: 421-433. (Paper presented at the Canadian Economics Association Meetings, Quebec City, 1978).

"The Rationale for Government Regulation of Quality"; "Policy Alternatives in Quality Regulation" with D. Dewees and M. Trebilcock, "Markets for Insurance: A Selective Survey of Economic Issues", in D. Dewees (ed.), The Regulation of Quality, Toronto: Butterworths 1983.

Regulation of Canadian Markets for Life Insurance with R. Winter, Department of Consumer and Corporate Affairs, Government of Canada, 1983.

- "Entry, Size Distribution, Scale and Scope Economies in the Life Insurance Industry" with S. Kellner, Journal of Business, 56(1), January 1983: 25-44.
- "Vertical Integration by Contractual Restraints in Spatial Markets" with R. Winter, Journal of Business, 56(4), October 1983: 497-518.
- "The Incentives for Resale Price Maintenance" with R. Winter, Economic Inquiry, 21(3), July 1983: 337-348. (Paper presented at the Western Economic Association Meetings, San Francisco, 1981).
- "Information, Search and Price Variability of Individual Life Insurance Contracts", Journal of Industrial Economics, 32(2), December 1983: 131-148. (Paper presented at the Canadian Economics Association Meetings, Montreal, 1980).
- "The Economics of Vertical Restraints in Distribution" with R. Winter in J. Stiglitz and G.F. Mathewson (eds.), New Developments in the Analysis of Market Structure, 1986: MIT Press. (Paper presented at the IEA Conference, Ottawa, 1982).
- "An Economic Theory of Vertical Restraints" with R. Winter, Rand Journal of Economics, 15(1), Spring 1984: 27-38. (Paper presented at the EARIE Conference, Louvain, 1982).
- "The Economics of Life Insurance Regulation: Valuation Constraints" with R. Winter in J. Finsinger and M. Pauly (eds.), The Economics of Insurance Regulation, 1986, MacMillan and Company Limited. (Paper presented at IIM Conference on Regulation in Insurance Markets, Berlin, 1984).
- "The Economics of Franchise Contracts" with R. Winter, Journal of Law and Economics, 38(3), October 1985: 503-526. (Paper presented at the EARIE Conference, Fontainebleau, 1984).
- Competition Policy and Vertical Exchange with Ralph Winter, University of Toronto Press, (Royal Commission on the Economic Union and Development Prospects for Canada), 1985, 119 pages.
- "Advertising and Consumer Learning" with Y. Kotowitz, in FTC Conference Volume, Consumer Protection Economics, 1986. (Paper presented at the FTC Conference on Advertising, Washington, 1984).
- "Is Exclusive Dealing Anti-Competitive?" with R. Winter, American Economic Review, 77(5), December 1987: 1057 - 1062.
- "Unlimited Liability as a Barrier to Entry" with Jack Carr, Journal of Political Economy, 96(4), August 1988: 766-784.
- "Vertical Restraints and the Law: A Reply" with Ralph Winter, Rand Journal of Economics, 19(2), Summer 1988: 298 - 301.

"Unlimited Liability and Free Banking in Scotland: A Note" with J. Carr and S. Glied, forthcoming Journal of Economic History.

"The Economic Effects of Automobile Dealer Regulation" with Ralph Winter, forthcoming Annales d'Economie et de Statistique.

"The Economics of Law firms: A Study in the Legal Organization of the Firm" with J. Carr, forthcoming in the Journal of Law and Economics.

Papers Under Review:

"The Effect of Deposit Insurance on Financial Institutions" (With Jack Carr) (Presented at the NBER Conference on Social Insurance in Cambridge, Massachusetts on April 28-29, 1989).

"Property Rights in Franchise Contracts" (with Ralph Winter) (Presented at the EARIE Conference, Budapest, 1989.)

Work in Progress:

"The Efficiency of Contractual Restrictions" (With Ralph Winter).

"The Economics of the Delivery of Medical Services" (With Jack Carr).