

ANTICOMPETITIVE ISSUES IN THE INFANT FORMULA INDUSTRY

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ABSTRACT

The center of interest of this paper is anti-competitiveness of the infant formula industry. Following the analysis of the industry behavior and legal activities concerning it, this essay hypothesizes that the U.S. government will not succeed in obtaining a legal judgement that would regulate the policies of the major infant formula firms. The infant formula industry is a heavily concentrated oligopoly. The main market share holders serve more than eighty percent of the market. Industry behavior is characterized by simultaneous, almost identical price increases by the industry leaders. The subsidiaries that produce and market formula are the most profitable sections of their organizations. The marketing practices of formula producers are highly controversial. Top producers adhere to the concept of ethical advertising, or advertising formula through licensed physicians only. This type of advertising severely limits the entrance of new competition into the industry and may violate antitrust laws. Demand for formula by women who do not breast-feed is relatively inelastic, which results in a high level of brand loyalty and price following behavior by the producers. Also at the center of interest is the government's Women, Infant, and Children (WIC) Program, which provides formula at low or no cost to mothers in lower income brackets. Numerous court cases were brought against infant formula producers, alleging price fixing behavior and restraint of competition in the market. These cases were not successful in winning judgements against the formula producers so far. The paper argues that the specific market climate, as well as the ambiguity of certain concepts in antitrust statutes, will allow the formula producers to continue with their behavior without the government's interference.

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INFANT FORMULA MARKET: AN ANTITHESIS OF FAIR COMPETITION ?

There aren't many alternatives available when it comes to feeding babies. For mothers who do not breast feed, infant formula is the non-substitutable nutritional ingredient in their children's diet. It is alleged by market watchers that businesses producing infant formula abuse this fact. The main reason for this claim is the 155.4% increase in the price of the infant formula between 1980 and 1993. The real price of milk, the main ingredient in formula, increased by only 36.4%, and the rise in the Consumer Price Index for groceries was 50.8% during the same time period (Day, 1991, McDermott, 1990). A glance at the structure of the infant formula industry in the United States of America reveals an extremely highly concentrated market, price following behavior, little or no competition, and questionable marketing strategies. These anti-competitive detectors lead economists to contend that the cost of feeding the youngest could be lower than the formula producing companies would like us to believe.

The purpose of this paper is to try to prove that the actions of the infant formula producers in the last two decades constitute antitrust offenses. It will be hypothesized, however, that under the current trends in antitrust litigation, it is not likely that the government will win a regulatory injunction against the industry leaders. This thesis will begin by evaluating the market behavior of the infant formula suppliers. Analysis will primarily concentrate on pricing and marketing policies of the formula producers, and will try to justify grounds for possible antitrust action against them. The demand side of the industry will also be assessed, using the economic theoretical concept of elasticity of demand. A description of the recent legal actions against the producers will be provided.

A broader analysis of the trends in the government's legal sanctioning of anticompetitive behavior will be given. Finally, based on research and analysis, policy implications with regard to the hypothesis will be presented.

PRODUCT BACKGROUND AND HISTORY

Infant formula is baby food in the form of liquids or reconstituted powders. As a substitute for mothers' milk, infant formula is the most important nutritional ingredient for babies who are not breast-fed (FDA Homepage, 1998). For the babies younger than four months who are not breast-fed, infant formula is the only food. Over 80% of mothers use formula during the baby's first year of life. For working mothers, this percentage is even higher; 90% of employed mothers with infants not older than six months use formula (McDermott, 1990). In addition, the development of a baby's brain and other vital organs in the first year of life is directly connected with the quality of the infant's nutrition. Due to its importance in the lives of babies, infant formula is the single most rigorously regulated food in the United States of America (FDA Homepage, 1998).

The Federal Drug Administration (FDA) enacted The Infant Formula Acts of 1980 and 1986 in order to secure that producers are abiding by the strict medical rules. These Acts require all formula products to meet equal and stringent safety standards. The safety regulations require producers to provide "standards for current good manufacturing practice (FDA Consumer, p. 41)", and to implement high quality control procedures. The Infant Formula Act specifies the nutritional composition of the formula, calls for pre-market testing of the product, but does not particularize which ingredients must be used

in the production process (FDA Consumer, 1996, Samuels, 1993). However, due to the rigorous regulation of the quality of the end product, all formula brands have practically the same nutritional value (Samuels, 1993).

Infant formula was invented in the 1860s. As the product improved qualitatively during the next decades, it became an increasingly popular substitute for breast-feeding. In the late nineteenth and early twentieth century, as more women joined the work force, there was less and less time to devote to household duties. This is believed to be the major reason for the success of infant formula. By the 1940s and 1950s, formula was accepted as a perfectly safe substitute for breast-feeding. Doctors began a practice of endorsing the product to mothers leaving the hospitals after giving birth. In 1958, 63% of mothers fed their newborns exclusively by formula (Samuels, 1993). This development applies mostly to the Western society, as a developed industrial environment is an essential pre-condition for the successful use of infant formula, because of the specific hygienic and societal requirements for its consumption. For example, many mothers in developing regions of the world used formula with the best intentions, only to make sometimes fatal mistakes concerning the lives of their children after mixing the product with contaminated water (Nestle Homepage, 1998).

Although the quality of infant formula today almost matches that of the breast-fed milk, breast-feeding is still considered the best baby food. In addition to the low cost, there are other characteristics of breast-feeding that make it a recommended first choice in infant nutrition. According to John D. Benson, Ph.D., and Mark L. Masor, Ph.D., pediatric nutrition researchers with one of the top infant formula producers, "Human milk contains living cells, hormones, active enzymes, immunoglobulins and compounds with

unique structures that cannot be replicated in infant formula” (Stehlin, p. 17). The producers, they argue, should not try to remake human milk in the form of powder. A more realistic goal is to try to equate the performance of a formula-fed infant with that of breast-fed infant. Infant performance is measured through factors like infant’s growth, absorption of nutrients, gastrointestinal tolerance, and reactions in blood (Stehlin, 1996).

MARKET STRUCTURE

The infant formula industry earned approximately \$3 billion in 1996, and formula sales expanded at an annual rate of 8-10% in the last few years (Medical & Healthcare Marketplace Guide, 1996). The industry resembles the structure of a tight oligopoly. The originators of the most popular US infant formula brands are presented in Table 1.

TABLE 1. Major Infant Formula Producers and Brands

Company	Subsidiary	Brands
Abbott Laboratories	Ross Products	Similac, Isomil
Bristol-Myers Squibb Co.	Mead Johnson Nutritional Group	Enfamil, Prosobee
American Home Products	Wyeth-Ayerst Laboratories*	SMA, Nursoy, Parents’ Choice
Gerber	n/a	Gerber Baby Formula
Nestle	Carnation	Good Start, Carnation Follow-Up

Source: *Advertising Age*, Brand Scorecard, 1996

*Wyeth-Ayerst phased out its U.S. infant formula brands SMA and Nursoy in 1996 and decided to serve only the international market. It returned to the U.S. market in the beginning of 1998, with Parents’ Choice formula brand.

The two firms that have dominated the market since 1984 are Abbott Laboratories, whose Ross Products division holds 51.5% of the market, and Bristol-Myers Squibb Co., with their subsidiary Mead Johnson Nutritional Group having 27.2% of the market (Brand Scorecard, Advertising Age, 1996, Samuels, 1993, and Market Share Reporter, 1996). Table 2 introduces the major producers of infant formula in the United States and their market shares in the last decade.

TABLE 2. Market Shares of the Major Infant Formula Producers, 1988-1995

Company/Year	1988	1989	1990	1991	1993	1994	1995
Abbott	53.0%	52.0%	50.0%	49.5%	54.1%	51.9%	51.5%
Bristol Myers	35.0%	33.6%	35.0%	32.0%	25.3%	25.2%	27.2%
Wyeth	10.0%	9.0%	9.0%	9.5%	10.6%	13.1%	10.5%
Nestle/Carnation	2.0%	2.8%	n/a	3.5%	n/a	5.5%	5.3%
Gerber	n/a	2.6%	n/a	5.2%	n/a	3.1%	2.4%
4FCR	98%	97.4%	~98%	96.2%	~95%	95.7%	94.5%

Source: *Market Share Reporter* by Lexis-Nexis, *Advertising Age* Brand Scoreboard, 1996

Table 3, presented on the next page, breaks up market structure by name brands. Ross produces the popular Similac and Isomil formulas, while Mead Johnson produces Enfamil and Prosobee infant formulas. There are a few other players in the market; however, they do not possess significant market power. The Nestle subsidiary, Carnation, holds 5.3% of the market. Up until 1996, Wyeth-Ayerst Laboratories, a subsidiary of American Home Products (AHP) had 10.5% of the market share. In 1996, Wyeth decided

to phase out its domestic infant formula line and leave the market. The impacts of possible shifts in market shares after the year of the Wyeth's departure are not yet fully known.

TABLE 3. Infant Formula Brands Market Shares

Rank		BRAND	Dollar sales to date		Market share	
1995	1994		1995	% change	1995	1994
1	1	Similac	\$938.6	6.3	36.6	37.1
2	2	Enfamil	474.0	22.3	18.5	16.3
3	3	Isomil	383.2	9.1	14.9	14.8
4	4	SMA*	185.4	-14.3	7.2	9.1
5	5	Prosobee	160.9	16.0	6.3	5.8
6	6	Nursoy*	85.7	-10.4	3.3	4.0
7	7	Good Start	79.5	6.8	3.1	3.1
8	8	Gerber	60.6	-16.8	2.4	3.1
9	9	Carnation Follow-Up	57.2	-1.5	2.2	2.4
10	10	Nutramigen	52.7	11.9	2.1	2.0
		Total Modified Milk	2,565.8	7.8	100.0	100.0

Source: *Advertising Age*, Brand Scorecard, 1996

*SMA and Nursoy, Wyeth products, were phased out in September 1996

It is speculated that Wyeth-Ayerst decided to leave the U.S. market in order to entirely concentrate on capturing more of the global formula sales. The international

market for formula, which is under the domination of Swiss's Nestle, has an enormous growth potential. We can suspect that after Wyeth's exit, Abbott and Bristol-Myers captured most of its U.S. market holdings during 1997 and the early months of 1998. The sales figures released for the September 14th, 1997 year ending period reported that Enfamil, produced by Bristol-Myers, earned \$966.7 million. Enfamil surpassed Similac, Abbott's product that earned \$689.1 million in the same period, at the top of the brands market share list (Lookout-Foods, 1998). The four-firm concentration ratio totaled 94.5% in 1995, and is most likely higher now after Wyeth's exit, indicating extreme market concentration (Brand Scorecard, Advertising Age, 1996, and Market Share Reporter, 1996). However, in the first months of 1998, Wyeth decided to return to the U.S. market with Parents' Choice, a soy-based infant formula intended for lactose intolerant babies (Lookout-Foods, 1998). There are no reports yet on the success of Wyeth's comeback product.

Rigorous barriers to entry, caused by marketing strategies practiced by the industry majors, are one of the most important reasons for the lack of competition in the infant formula market. The story behind the Swiss corporation Nestle's bid to infiltrate the US market illustrates this point. In the beginning of 1980s, when Nestle decided to market its formula product, Carnation, in the United States, three major domestic producers, Abbott, Bristol-Myers, and AHP took precautionary measures in order to try to limit Nestle's success. Executives of these companies met and decided to strengthen an industry advertising code that prohibited direct marketing to consumers. This code allowed advertising through physicians only, the so-called *ethical advertising*. Under this type of marketing, the formula is promoted like a prescription drug. Each company has

its own large and well-informed sales force, which visits physicians and details them on the company's brand product. Doctors then recommend a successfully promoted product to the new mothers. This type of advertising was practiced in the infant formula industry for the last half century.

Ethical advertising became a well-protected industry tradition, as both the formula producers and physicians overwhelmingly supported it. Physicians tend to support this type of advertising because the ethical marketing is believed to result in patients' frequent follow-up visits to the same doctor's office for advice and check-ups (Samuels, 1993). Consumer loyalty is also the reason why the formula producers advocate ethical advertising. Once the doctor recommends the product, the mothers tend not to switch brands easily. This meeting of interest resulted in "a comfortable symbiotic relationship between infant food manufacturers and the profession that has lasted for more than 50 years (Samuels, p. 8)".

The support for ethical advertising was against the interests of the newcomer Nestle, which did not have an established web of physicians familiar with its product. Abbott, Bristol-Myers, and AHP proclaimed that the move was made in order to protect and promote breast-feeding and protect the safety of children. The breast-feeding argument has been popular with infant formula producers for a long period of time. Less direct advertising promotes breast-feeding, claims the American Academy of Pediatrics (AAP), an organization of doctors that frequently oversees the infant formula industry's behavior. The AAP argues that doctors promote the formula instead of human milk only when necessary, but television marketing promotes formula without any restraint. In general, it is questionable that the formula producers listen to and promote AAP's

standpoint only for ethical reasons. Ethical advertising has been in place for a couple of decades. During this time, the major formula producers have developed extensive and professional sales forces, responsible for *detailing*, or informing, almost every physician in every hospital in the United States. Once the formula producers establish presence among medical professionals, their advertising costs consist only of funds for representatives, and free samples and gifts to hospitals distributed by them. It would be very costly for Abbott or Bristol-Myers to start advertising directly on television and in other media. And Nestle's arrival in the U.S. market increased the possibility of this happening.

The largest companies realized that their collaborative actions against Nestle might constitute grounds for legal action by the Federal Trade Commission. In order to avoid possible antitrust collusion judgement against them, the three companies agreed to *unilaterally* proclaim their adherence to the ethical advertising, instead of giving a *joint* support for this industry marketing standard.

In 1986, the American Academy of Pediatrics (AAP), together with the executives of the major formula producers, formalized the advertising agreement into an industry code. We argued earlier that one of the reasons that both doctors and formula producers support ethical advertising is consumer loyalty. The formula producers' additional reason for support for ethical advertising is an alarming cost of direct advertising. Also, there is a possibility of new entrants gaining market share as, under direct advertising, the mothers all over the United States could be introduced to a new product for the price of TV advertisement. On the other hand, the members of AAP support ethical advertising at least in part because they believe that ethical advertising makes it easier to promote

breast-feeding. So, although a “symbiotic relationship” in supporting ethical advertising exists between the producers and the physicians, motivations of two groups do differ.

After Nestle started marketing its product on television and in magazines, the AAP sent letters to its entire physician membership condemning Nestle’s direct advertising policies. This action had an important influence on Nestle’s poor performance in the U.S. markets and winning only 5.5% of market share for infant formula products (Epstein, 1996, Levin, 1993, Flinn Siler, Woodruff, 1990).

In May 1993, Nestle executives decided to take legal action against the industry leaders Abbott and Bristol-Myers, as well as against the AAP in the U.S. District Court for the Central District of California (Nestle Food Co. v. Abbott Lab., 9th Cir., filed May 28, 1993). The Swiss multinational claimed it had evidence to prove a breach of Section One of the Sherman Antitrust Act, which prohibits conspiring to restrain trade. Nestle’s evidence included documents supporting the claim that the industry leaders met, or conspired, to strengthen the ethical advertising policy. Nestle also claimed to have documents linking AAP leaders to the producers’ strategy of restraining trade through the support for ethical-only advertising. Bristol-Myers settled with Nestle for an undisclosed amount before the trial, but Abbott and AAP stayed to defend their industry policies. Their defense was based on the following arguments: the ethical advertising policy was in place before Nestle decided to penetrate the US infant formula market; both Abbott and AAP had unilaterally and independently elected to abolish a direct advertising policy; and Nestle made marketing mistakes that influenced its performance in the US market, but were not connected with the actions of Abbott, AAP, or other industry players (Epstein, 1996, Levin, 1993).

Abbott and AAP's argument that the ethical advertising was in place before Nestle decided to enter the US market was correct. However, the ethical advertisement policy was substantially strengthened upon Nestle's entrance. And although both Abbott and the Academy of Pediatrics had proof of independently deciding to adhere to that policy, it is now known that the industry leaders communicated between themselves on these issues and subsequently decided to unilaterally enforce them, fearing antitrust charges of conspiracy between companies to restrain trade. The argument that Nestle made its own public relations mistakes while trying to win a share of the North American market is correct to some extent. In the international market, Nestle is the major producer and distributor of infant formula. During the 1980's the major public relations disaster haunted the Swiss company when the British consumer group linked Nestle to infant fatalities in developing countries. Also, in the US market, Nestle encountered problems while marketing its Good Start, H.A. formula. H.A. stands for hypoallergenic, and was believed by some mothers to be a specialty formula for children that were lactose intolerant. After the use of this product resulted in health problems in children, the FDA ran an investigation. This inquiry resulted in Nestle's having to remove the suffix H.A. from the name of its formula. The company also had to pay legal fees of the investigation. This course of events caused a lot of negative publicity for Nestle (Epstein, 1996, Levin, 1993).

The Nestle vs. Abbott and AAP case was decided in favor of defendants. The U.S. District Court decided that Nestle failed to prove Abbott and AAP conspired to restrain trade (Nestle Food Co. v. Abbott Lab., 9th Cir., filed May 28, 1993). The decision was based on the premise that because AAP did not possess the power to make

Nestle follow the *ethical advertising only* policy, neither the Academy or Abbott can not be guilty of illegal collusion to restrain trade. Nestle argued that no matter whether AAP possessed the power or not, the court should find whether the industry behavior was illegal. This contention was not accepted by the court (Epstein, 1996, Levin, 1993, Flynn Siler, Woodruff, 1990).

INDUSTRY BEHAVIOR AND POLICIES

Consumer brand loyalty is a key to understanding the producers' success in the infant formula business. We noted that the parents' adherence to the physicians advice on which brand to use is the top reason ethical advertising is so popular among formula producers. If a producer successfully lobbies a physician, and the physician recommends the producer's brand to a mother, it is safe to say that in many cases the producer will not have to spend a penny more on promotion of its product to this mother; she *will* listen to her doctor's advice. An example of Los Angeles mother interviewed by Business Week illustrates this point. She was given a sample of Ross's Similac formula upon being discharged from the hospital, a common practice under ethical advertising. When she was asked whether she used any other brands, her response was "I just did not want to risk upsetting him [baby] by switching formulas (Business Week, Flynn Siler and Woodruff, p. 52-53)."

Although there are no published statistics on the frequency of switching brands, widespread belief is that it occurs rarely. Even when Wyeth introduced Bonamil, a formula marketed at a discount price, in 1995, it enjoyed only modest success among

consumers. A possible explanation for the failure of Bonamil to capture a considerable market share is that its price was not discounted as much as needed for the mothers to value price reduction more than the security of the doctor recommended product. Experts agree that in such a consumer-loyal market as the infant formula market, “established customers are unlikely to be lured away by small price reductions. If ... [Competitor 1]... wishes to expand its share of the repeat purchase market it will need to lower its price enough to encourage some of ...[Competitor 2’s]... customers to incur the switching cost. [Competitor 1]... will be forced to take a large price cut to increase the quantity sold by a small amount (Samuels, p. 8)”.

A further look into the economic theory’s concept of *price elasticity of demand* for infant formula is helpful in understanding the industry practices. Price elasticity of demand is a concept representing the percentage change in quantity demanded that results from a one percent change in the price of the good. In other words, it is a measure of the sensitivity of quantity demanded of a good to the price change for that good. In the previous paragraph, we concluded that the elasticity of demand for particular brand of formula is very low. Once a mother starts feeding her baby with one brand of formula, even price changes are not likely to affect her loyalty to the product label. The following discussion will concentrate on the elasticity of demand for the formula product in general, without the implications of brand loyalty. Among new mothers who do not breast-feed, the price elasticity of demand for formula products is close to zero; regardless of price changes, babies still need to be fed with formula. There are very few products that could be labeled as perfectly inelastic; infant formulas for babies and insulin for diabetic’s patients are among the goods that come close. The users of formula can rarely find

readily available substitutes. From an ethical viewpoint, this is an extremely dangerous business situation. The producers are led to believe that price increases will not substantially influence the quantity purchased of formula, demand for it being close to *perfectly inelastic*.

The U.S. government did implement programs to try to curb the effects of an extremely low price elasticity of demand for infant formula. The Women, Infant, and Children (WIC) program, discussed further in one of the following sections of this paper, was designed to provide low-cost formula to mothers that can not afford to buy formula in retail. Those mothers eligible for the WIC program receive formula at low or no cost. However, the formula producers are still able to profit from everyday retail sales of its product. For the mothers who do not qualify for WIC and buy the product in supermarkets at regular prices, formula is almost perfectly inelastic regardless of government interventions. Unfortunately, society does not have many alternatives in preventing low price elasticity of demand for retail-sold infant formula. One way to increase the price elasticity of demand for infant formula is to promote the only substitute to formula products, breast-feeding. Experts agree that breast-feeding is a healthier and much less expensive alternative to using the formula. However, the probability that a large part of population of mothers would switch to breast-feeding in the fast-paced, career-oriented, and prosperous nineties is low. The fact that the prospects of increasing the elasticity of demand for infant formula are poor leads to the conclusion that society has to find alternative ways to make this product more affordable. One possible way of doing this is to regulate prices.

PRICING BEHAVIOR

Low price elasticity of demand for infant formula and its consequences leads us to the issue of the *pricing behavior* of infant formula producers. The infant formula producers' pricing policies are a main concern of the government's antitrust enforcers. As previously noted, infant formula producers raised prices of their product by 155.4% in the last decade (Day, 1991). The price of the formula did not decrease once during this time period, although the real price of the product's main ingredient, milk, reportedly declined (McDermott, 1990).

Not only were the price increases by Ross Laboratories, Mead Johnson Nutritional Group, and Wyeth-Ayerst continuous, they were also simultaneous during the last two decades. The average price difference between Similac (produced by Ross) and Enfamil (produced by Mead Johnson) has equaled one cent since 1979 (Senate Hearing, testimony of Stefan Harvey, 1990). In May 1990 and March 1991, the U.S. Senate's Subcommittee on Antitrust, Monopolies and Business Rights held hearings concerning pricing policies of the infant formula industry. In these hearings, the extent of the infant formula producers' price-following behavior was a major issue. Table 4, used as an exhibit in the Senate Hearing in 1990, shows the price increases by manufacturer in the last decade, of thirteen-ounce concentrated infant formula with iron. From the table, we can see that the maximum price difference per can of formula between the major brands was 3.6 cents on the beginning of 1989. The time span between the price increases by all three major competitors was as low as 1 week in 1985, and averaged at less than 12 weeks for the

Table 4. Price Increases in Thirteen-Ounce Concentrated Infant Formula With Iron, 11/81 – 5/90, by Manufacturer

MEAD JOHNSON			ROSS LABORATORIES			WYETH LABORATORIES					
effective date of increase	Whole-Sale Price Per case	whole-sale price per can	effective date of increase	whole-sale price per case	whole-sale price per can	effective date of increase	whole-sale price per case	whole-sale price per can	MAX per case price diff.	MAX per can price diff.	Time span per block of incr in weeks
11/02/81	\$21.74	\$0.906	11/23/81	\$21.72	\$0.905	1/14/82	\$21.72	\$0.905	\$0.02	0.001	10.4
09/27/82	23.63	0.985	09/13/82	23.58	0.983	06/03/83	23.02	0.959	0.61	0.025	35.7
08/29/83	24.81	1.034	08/22/83	24.67	1.028	11/11/83	24.17	1.007	0.64	0.027	11.6
06/04/84	26.48	1.103	06/25/84	26.48	1.103	07/13/84	25.98	1.083	0.50	0.021	5.6
04/01/85	28.25	1.177	03/25/85	27.82	1.159	----- no increase -----			0.43	0.018	1.0
02/10/86	29.66	1.236	02/03/86	29.26	1.219	01/21/86	29.00	1.208	0.66	0.028	2.9
11/17/86	31.44	1.310	11/03/86	31.01	1.292	09/17/86	31.03	1.293	0.43	0.018	8.7
08/03/87	33.33	1.389	08/03/87	32.88	1.370	06/19/87	32.88	1.370	0.45	0.019	6.4
03/01/88	35.04	1.460	04/18/88	34.85	1.452	06/17/88	34.69	1.445	0.35	0.015	15.4
01/02/89	37.20	1.550	01/16/89	37.99	1.583	06/16/89	37.12	1.547	0.87	0.036	23.6
10/02/89	40.68	1.695	08/01/89	40.66	1.694	12/04/89	40.46	1.686	0.22	0.009	17.6
05/02/90	43.92	1.830	04/02/90	43.92	1.830	04/30/90	44.26	1.844	0.34	0.014	4.4

Source: Senate Hearing "Competitive Issues in Infant Formula Industry", 1990

Data on formula price increases were taken from the manufacturers' wholesale pricing sheets and are based on the price of formula when it is purchased in the quantity of a truckload. This is how the formula manufacturers themselves have tracked changes in the wholesale price of formula.

whole decade. Although we do not have this price analysis published for the current decade, most industry watchers have observed the same type of pricing behavior during the 1990s (McDermott, 1990).

Analysis of Table 4 shows that Abbott's Ross Laboratories initiated price increase five times during the time period covered in the table, Bristol-Myers's Mead Johnson subsidiary led four times, and AHP's Wyeth-Ayerst three times. The fact that all three major firms acted as price leaders in the last decade leads us to conclude that a price

following mechanism is well-established in the infant formula industry. No single company needs to continuously be a catalyst for the price increase. Because the mechanisms of price following are known throughout the industry, any of the companies can initiate the increase and the others will follow suit.

Several other interesting patterns can be derived from Table 4. In 1985, Wyeth Laboratories did not increase the price of its formula product. In the beginning of 1986, nevertheless, Wyeth successfully led the industry price increase, although holding approximately only 10% of the market share. The response time from Mead Johnson and Ross to the Wyeth's lead was only 19 and 12 days, respectively. Wyeth led the price increase in the next two years too. However, its stronger industry partners, Mead Johnson and Ross, seemed to think that Wyeth's price leadership might earn it more power in the industry. In order to prevent this from happening, they increased their response times to an average of 53 days in 1986 and 45 days in 1987. Mead Johnson and Ross's strategy seemed to work, as Wyeth did not emerge as the price leader once after 1987.

Before and after the 1995-1997 time period, Wyeth's responses to price leads were considerably delayed in comparison to other players in the industry. This fact might signal that 3rd placed Wyeth has been trying to capture more of the market in the periods when its formula was priced less than the competitors'. However, the company wasn't successful in seizing Mead Johnson and Ross's customers. The demonstration of strength by the industry's top two firms, and Wyeth's apparent inability to capture more market share or significantly influence the pricing behavior of its competitors also might have played a role in the company's decision to leave the U.S. market in 1996.

It is also evident from Table 4 that before 1986, the response time of a price follower to the price leader in the industry was significantly lower than after this year. Consider Mead Johnson and Ross's behavior only, since Wyeth, as noted in previous paragraph, seemed to have a strategy that differed from the one employed by these two companies. In 1981, the response time of Ross to Mead Johnson's lead was 3 weeks. In 1982, the leader was Ross, and the competitor's response time was 2 weeks. In 1983, 1984 and 1985, the response times were 7, 21, and 6 days, respectively. However, after 1988, when the years of Wyeth's brief price leadership ended, the response time increased to 2 weeks, 8 weeks, and 4 weeks, in 1988, 1989, and 1990, respectively. Most likely, a reason for this trend of slower price following was a beginning of the Senate and FTC's investigation of the formula producers, which began around 1988. Table 4 is an example of a price behavior of infant formula producers. An analysis of reasons that make a simple price following strategy possible in the infant formula industry is next discussed.

In addition to a low price elasticity of demand for infant formula, there are several other industry preconditions that make these pricing patterns by the industry leaders possible. Previously mentioned brand loyalty is one of them. The fact that consumers' brand loyalty is strong allows two formula producers to employ a simple pricing strategy model. It also explains the continuous price-following behavior by the formula producers. The producers know they could, in theory, unilaterally lower prices by a considerable amount, briefly capture more market share, then provoke the same response from the competitor, and both lose profits. But they chose not to be caught in prisoner's dilemma game*. Instead, they opted to follow each other's pricing closely and earn the

*Prisoner's Dilemma – refers to a game that results in equilibrium in which both players end up worse off than they would by choosing alternative strategies.

highest possible amount of revenue, keeping the market shares intact. In this industry, where pricing behavior like this was practiced for at least a few decades, no meeting between executives is needed to arrange prices; they are simply matched within few weeks or so.

When prices are matched shortly after an initial price increase, *tacit collusion* occurs. Tacit collusion is made possible by *facilitating devices*, signals between companies that result in breach of antitrust statutes (Day, 1991). These signals occur without an actual meeting between the company representatives to discuss pricing, which would constitute a *per se* violation of Sherman Antitrust Act. For this discussion, it is important to note that, despite the end result obviously being almost identically matched prices, even the tacit collusion between the infant formula producers is extremely hard to prove. Because of consumer brand loyalty, the infant formula market is clearly segmented into relatively stable parts of the market that buy each popular brand. In this type of divided market, “each firm simply continues to sell to its own customers and avoids aggressively attacking another firm’s market share (Samuels, p. 9)”. This being the case, even the doctrine of tacit collusion, needed for antitrust judgement against the industry leaders, is hard to be distinctly established.

To better understand how price matching can be accomplished even without the full presence of tacit collusion in an industry with strong level of brand-loyalty, consider the case of the soft drink industry. The soft drink business has a certain level of consumer brand loyalty, but consumer loyalty to Coke or Pepsi is not nearly as strong as it is to the physician-recommended infant formula. Major soft drink manufacturers, although operating in a similarly oligopolistic environment, *do* price-compete. If, for

some reason, the executives of the major soft drink producers would decide that they would like to increase their prices by 160% (which happened in the infant formula market) in the next decade, they would not be able to do it as easily as the infant formula producers can. If the price of Pepsi increases by even a small amount, a considerable group of consumers will switch to Coke, and vice versa. If the price of one of these cola brands would increase by a significant amount, most of the consumers would switch their preferences. So, the soft drink producers would have to strongly agree on their price matching policies in order to simultaneously increase the product prices without causing major shifts in their market shares. If not meeting to discuss prices, they would have to somehow develop a clear tacit collusion in order to implement their price-following policies.

Suppose that the same level of consumer loyalty as the one in the infant formula industry exists in the soft drink industry. If this were true, Consumer A would be strongly determined to buy only Pepsi and Consumer B determined to buy only Coke. It would take a significant price change to alter these consumer's choice of brands. However, price following would be much easier for the producers. If Pepsi and Coke wanted to obtain a 160% price increase, they would have to slowly, simultaneously, inflate prices, and the consumer preferences would not, most likely, change in the process. This way, price matching could be done even without tacit collusion, establishment of which requires a presence of the intent to act anticompetitively. The producers here can argue that they just kept responding to their competitors actions, which is an explanation well accepted by the courts. This scenario is an illustration of

what happens in the infant formula industry. When the market is segmented like it is in the case of infant formula, much less than tacit collusion is needed to follow prices.

In addition to the issues described above, marketing through hospital administration itself discourages price competition in the industry. Doctors, who recommend the product to new mothers, are not price sensitive. They will endorse a product in which they are best informed through samples, producers' booklets, and, frequently, gifts to hospitals. Rarely would physicians alert mothers on the cost differences between the formula brands. Since doctors' decisions are not based on cost, the producers' incentive to price-compete is eliminated.

Other implications of ethical marketing also discourage price competition. Ethical marketing results in high barriers to entry in the infant formula industry, since only the most powerful companies can afford to use this marketing strategy. Industry newcomers, like in the case of Nestle, are discouraged by the power of industry leaders and the AAP in influencing physicians' attitudes toward a new product. As a result of these barriers to entry, the major companies need not worry about employing business practices like competitive price decreases in order to win and keep market shares. These business practices are alien to the infant formula industry leaders. When a new entrant appears, the major companies start preaching the necessity of not allowing direct consumer advertising for the sake of children's safety or breast-feeding promotion. The formula producers keep high barriers to entry most likely because they are afraid of another menace direct advertising would result in, *price competition* (Epstein, 1996, Samuels, 1993).

WOMEN, INFANTS, and CHILDREN SUPPLEMENTAL FOOD PROGRAM (WIC)

An important characteristic of the formula industry is the state-sponsored Women, Infants, and Children Special Supplemental Food Program (WIC). Under this federally funded program, U.S. states buy infant formula from the producers and distribute it for little or no cost to mothers in lower income brackets. The aim of the WIC program is to “reduce nutritional deficiencies such as anemia, low birth weight, and failure to grow properly and is available to pregnant, postpartum and breast-feeding women, as well as children up to the age of 5” (Senate Hearing 5/90, testimony of Michele Alston, p. 7). The WIC program was started in 1972. The program-eligible population are women with income less than 185% of the federally defined level of poverty. In addition to low income, eligibility for the WIC program may be determined based on medical, nutritional, dietary risk, and several demographic indicators (About WIC Homepage, 1998). In the last decade, the WIC program was cited as a main stage for the infant formula producers' anti-competitive behavior.

States buy approximately 30% of all infant formula produced for the WIC programs annually (Senate Hearing, testimony of Stefan Harvey, 1990). This fact makes WIC the single largest purchaser of infant formula. Some industry experts believe that the percentage of formula that the states buy for WIC is now over 50% (Sternman, 1994). These sales amounted to \$450 out of \$2,500 million in infant formula sales in 1996. Thus, the WIC-directed sales amount to 30-50% of total industry volume, but only count as 18% of the total industry revenues. This discrepancy is due to rebates that the formula producers pay to the state WIC programs in order to secure their contracts. The rebate is a

dollar amount per can that the formula producers are paying to state WIC programs. These rebates amount to anywhere between \$0.40 and \$1.50 per can of formula. When the cost of paying rebates is considered, it is evident that the producers profit considerably less from the WIC market than from retail markets.

Each state is responsible for negotiating the terms under which the WIC infant formula is bought from the producers. The states then distribute the available formula vouchers to as many eligible women as possible. These vouchers are used to pay for formula in supermarkets. Of the eligible U.S. population, an estimated 50-65% is served by WIC. Therefore, not all the women that need the formula are part of this limited federally funded program. Most of the states' WIC branches have tried to increase the percentage of eligible women involved in the program by negotiating higher rebates or other concessions from the major producers. The practice of paying rebates started among producers after the WIC program was implemented. Because the WIC programs buy such enormous quantities of infant formula, top producers compete for the state WIC contracts by offering rebates. As time went on, the amount of infant formula required by WIC increased and the competition between producers increased. Consequently, rebates have grown. With higher rebates secured, the states can save money and serve more eligible women. And the formula producers continue to offer the rebate, because of the importance of the WIC market to their sales volume. Indeed, the WIC market is so important for the formula producers that, in addition to offering high rebates, they started donating hospital equipment, samples of formula, and in some instances cash payments, to the government agencies and hospitals connected with WIC. These practices were

started by the formula producers in order to increase their chances of winning a state WIC contract.

In 1980, a *competitive bidding* system was pioneered by several states. Until this time, an *open-market* system was in place, and each state bought formula from variety of producers chosen based on cost considerations and other issues. Under the competitive bidding system, the states generally choose a sole supplier of infant formula for its WIC market (the system regulations vary from state to state). The producers submit their anonymous rebate bids and the originator of the highest one is chosen to be the sole supplier. The decision to institute competitive bidding followed substantial increases in the price of infant formula during the 1970s. States that started the bidding system were hoping to stimulate companies to raise their rebates. Higher rebates would result in offsetting losses to WIC that resulted from the formula price increases. The formula producers were against the bidding system, fearing that the high rebates would diminish their profits. The government approved the bidding system, despite the fierce industry opposition. Consequently, the WIC program regained its ability to serve more women by saving money. However, not long after, the formula producers started simultaneously offering lower and lower rebates, and the WIC programs were strapped for savings cash once again (Senate Hearing, 1990, Epstein, 1996, About NAWC and WIC Homepage, 1998 McDermott, 1990, Samuels, 1993).

PRICING BEHAVIOR IN WIC PROGRAMS

There have been numerous court cases and Senate hearings which have tried to expose the pricing behavior of infant formula producers related to WIC programs. As previously explained, the competitive bidding system was introduced in order to secure higher industry rebates for these state programs, which would result in saving money, and would allow more eligible women to be covered. However, after several years of the successful savings for the state WIC programs, industry giants started simultaneously offering lower rebate bids. In 1990, Abbott offered a 75 cents rebate per formula can to the Connecticut state WIC program. Prior to this, bid offers were usually higher than one dollar (Senate Hearing, 1990). This rebate was the lowest bid ever made by the company. Naturally, Abbott lost the contract in Connecticut. After several days, Bristol-Myers sent a letter to state WIC program directors, stating its intent to offer only 75 cents per can in every state. Abbott soon followed suit, continued to offer 75 cents elsewhere, and the bids for rebate were successfully lowered. The costs of the WIC programs were increased as a result of this industry behavior and less eligible people have been able to participate in the program since 1990 (Epstein, 1996).

The Federal Trade Commission observed these bidding practices and in 1992, filed suit against Abbott, Mead Johnson (Bristol-Myers subsidiary), and Wyeth, alleging conspiracy to avoid competition with regard to the competitive bidding system. The FTC specifically cited the WIC bidding in Puerto Rico as a basis for its action. In 1990, the government of this island had to decide whether to institute a competitive bidding (sole supplier) system or an open market system for its WIC programs. The infant formula

producers, hoping to win the contract for sole supplier of the product, offered valuable amounts of free formula and cash payments to government hospitals in Puerto Rico. The Puerto-Rican government was worried that once it awarded a contract to the sole provider of formula, companies would stop with these marketing practices, which helped those in need. So, the government was more inclined toward the open market system, under which they thought the companies would continue to provide samples and cash payments for hospitals in hope of securing as many WIC contracts as possible. (Epstein, 1996, Abbott Homepage, 1998).

In order to weigh its options, Puerto Rico accepted bids on rebates for both a sole supplier and an open market system in 1990. The bids for the sole supplier status were higher than the ones for the open market system, as the companies calculated in the costs of marketing to hospitals under the open market system. Under the sole supplier system, once the producer is awarded a contract, it does not have any incentive to spend more money promoting it to WIC programs. Abbott submitted a rebate bid of \$1.106 per can of formula for the sole supplier system, and \$0.43 per can for the open market system, while the industry competitors submitted lower bids. Puerto Rico first decided to accept Abbott's sole supplier bid, but soon cancelled the bidding round fearing that no significant funds would be saved for the WIC program. In the second round of bidding, Abbott did not bid for the sole supplier system, and kept its open market bid at \$0.43/can. The forty-three cents offer was higher than the first sole supplier bid of \$1.106/can, after the Puerto Rico government calculated in the benefits of gifts to hospitals under the open market system. Consequently, the Puerto Rican government decided to endorse the open market system (Epstein, 1996).

Abbott bid low for the sole supplier system in the first round of the bidding with the purpose of making the island's government accept the open-market system. Bristol-Myers and Wyeth, the FTC would later allege, knew how much Abbott would bid. Based on this competitive information, they decided not to contest Abbott's low sole supplier bid, also hoping for the open-market system to win. Under the open market system, the rebates that the companies are paying are much lower than those in the sole supplier system and this fact makes the open market system popular with the producers. Even when the producers calculate in the cost of advertising to hospitals that is required under the open market system, this system is still more profitable for them than the sole supplier system, under which the companies pay significantly more cash in rebates (Epstein, 1990).

Although Puerto Rico was satisfied with the results of the bidding process, the FTC was not. Since WIC is a federally funded program, the main WIC office does not receive any benefits from the Abbott, Mead Johnson, and Wyeth's gifts to the Puerto Rican government hospitals. At the federal level, the program would have been better off if the Puerto Rican government had accepted the sole supplier bid and brought in more cash. In *FTC vs. Abbott*, the FTC sued the companies on two counts, alleging that they "conspired or ... combined with others to fix, stabilize, or otherwise manipulate the Puerto Rico WIC rebate bids in 1990 and to guarantee an open market system rather than a sole source system and that they issued information with anticompetitive intent or with an independent legitimate business reason that showed to competing bidders that defendant preferred, and would bid in a manner to support, an open market instead of a

sole source system in Puerto Rico” (Epstein, p. 15). Bristol-Myers and Wyeth settled, leaving Abbott as the only defendant in the case (Epstein, 1996).

The case resulted in the FTC losing on both counts. On the first count, the court contended that the FTC failed to show a presence of conspiracy to restrain competition by fixing bids. The judges ruled, citing cases *Monstanto Co. v. Spray-Rite Serv. Corp.* (1984) and *Lovett v. General Motors Corp.* (1993), that there was not enough evidence to show a “conscious commitment to common scheme” (Epstein, p. 18) among competitors in Puerto Rico. On the second count, the FTC also failed to prove that the infant formula producers engaged in any type of communication that would result in anticompetitive collusion.

The Puerto Rico decision was not the end for litigation troubles for the infant formula producers. Even after lowering the rebate bids, the prices of formula provided to WIC were significantly lower than the retail prices of formula. And the formula producers were earning arguably considerable profits even on the WIC price level.

The cost of the formula ingredients was no more than \$0.22 per thirteen ounce can in the 1990 and 1991, during the Senate Hearings. The cost of the ingredients most likely is approximately the same in 1998, given the decrease in the real price of milk, a main component in the product. We can speculate that with the production and research and development (R&D) costs added, the cost of one can does not exceed \$1 (Senate Hearing, 1991). In 1998, Abbott Laboratories spent close to \$280 million for R&D. This accounted to approximately 10% of the company’s total sales during the last few years (Abbott Financial Statement, 1998). In absence of the subsidiary breakdown of Abbott’s

R&D expenditures, we can only suspect that Ross, and other company divisions, spend even percentages for R&D.

If we consider the 1990 scenario, a 13-ounce formula was priced at average of \$1.83 (Table 4). R&D costs per can totaled \$0.18, or ten percent of the price of one can sold. When the production, transportation, and advertising expenses are added in, the cost of one can adds to no more than \$1.00. This might be a far reaching speculation in the absence of reported production and other costs. However, this surmise is based on the formula producer's claim that R&D costs have a pivotal role in constituting a price of their product. After the rebate matching that resulted in a decrease in the amounts of bids offered to WIC programs, the average rebate paid was of \$0.75 (1991 figures, provided during the Senate Hearings) per can. Thus, with the retail price of formula at \$1.83 and manufacturing cost at estimated \$1.00, the producers made only a \$0.08 profit per can in WIC programs in 1990. And before the "bid following" behavior that resulted in decrease in rebate amounts, the formula producers were incurring losses.

There are many reasons why the reader should not rush to the approval of the formula producers' behavior. First, after the competitive bidding process is completed, a contract is awarded to one, sole formula supplier. That supplier does not need to incur any more costs for advertising in a state where it won the contract, since the firm is basically granted exclusive monopoly power within the respective territory. Also, the fact that WIC buys 30% of the formula provides a certain kind of guarantee to the producers that their manufactured volume will be sold. In addition to this, and taking into consideration the volume needed by WIC, once a contract is awarded to a firm for the coverage of one state, the company can benefit from possible economies of scale in

transportation and storage. Thus, we can argue that the producers' cost of \$1.00 to manufacture and market formula might be lower due to the reasons noted above, and that WIC profits for each firm might be higher than they seem.

Although there is some evidence that infant formula firms do not earn excessive profits from the WIC formula, this is not the case at the retail level. The issue of justifying the high prices at the retail level prompted a long investigation of the industry pricing strategies. The FTC and the states alleged antitrust behavior in the infant formula industry during this investigation. Seventeen states fought the infant formula producers on several fronts. First, state attorney generals alleged simultaneous price increases. Second, they accused the producers of agreeing on forbidding direct marketing and therefore, discouraging entry into the industry. Third, the states alleged that the main companies conspired to lower rebate bids for WIC programs. These cases were settled without trial, leaving many to believe that the formula producers are hiding the facts. Abbott agreed to settle for \$32.5 million in 1996, and Mead Johnson followed by paying \$31.775 million later that year.

POLICY IMPLICATIONS

Abbott, Bristol-Myers, and Wyeth-Ayerst have in the last decade succeeded in avoiding a thorough investigation of their industry behavior by settling legal charges before the trials or winning judgements based on their ability to better navigate through the "gray areas" of antitrust laws. The infant formula industry continues to be

characterized by traditional attributes of price following behavior, little or no competition, and high barriers to entry. Following discussion will examine the probability of the U.S. government finally finding a way to regulate this industry in order to make it more competitive.

Prices of infant formula are still high and continue to increase. Ross Laboratories, a subsidiary of Abbott, allegedly earns a disproportional 50% of the company's total profits, while it sells less than 25% of the company's output (Senate Hearing, 1990). Another source claims that Ross' formula earns 16% of Abbott's total profits, while accounting for 14% of the company total sales (Epstein, 1996). The latter estimate would not represent a significant discrepancy between the percentage of total sales of formula and percentage of profits earned by the formula producers. Abbott and Ross's executives dispute all of these numbers and refuse to provide correct figures, claiming that these are "sensitive competitive information" (Senate Hearing, p. 103). Thus, it is impossible to prove the credibility of either assertion. However, during the Senate Hearings in 1990 and 1991, many trustworthy witnesses supported the claim of highly disproportional profits earned through the sale of infant formula and this paper will assume that such a discrepancy does exist. Mead Johnson, a subsidiary of Bristol-Myers, also reportedly earns disproportional profits from formula and this was also the case with Wyeth-Ayerst, a part of American Home Products, while it was fully represented in the domestic formula market. It is not extraordinary for companies to have one product that brings in higher profits than other ones. However, the center of discussion here surrounds a product essential to the healthy development of infants, and the industry practice of earning extra profits on this product is ethically highly controversial.

Economic theory provides an explanation of the relationship between elasticity of demand, changes in prices, and changes in a total revenues of the firm. Based on this economic rationalization, if a demand for a product is extremely inelastic, like it is the case with infant formula, price increases would cause the firm's total revenue (TR) to increase. This happens because, due to the inelasticity of demand for the product, the impact of price increases on the TR outweighs the impact of a decrease in the quantity demanded because of higher prices. In other words, the amount of new revenue brought in after a price increase in formula is higher than the amount of revenue lost with a decline in quantity demanded for the more expensive formula. The question becomes, is this additional revenue justified? Critics of the infant formula industry argue that the producers are using the increase in TR to supplement their profits. An alternative explanation, frequently used by the firms, is that high industry profits are needed to fund the rising research and development (R&D) costs. However, the Senate Hearings and earlier discussion pointed out that the level of profit allegedly generated from the sales of this essential nutrient can not be fully explained by the R&D needs. Other things, like transportation costs, or uneven economies of scale in different parts of the country, might help explain some, but not all, price increases by the formula producers (Senate Hearing, 1990).

Whether we agree with the producers' explanations for price increases or not, there are no antitrust laws that could sanction companies just because of high prices. If the government decides to start another legal battle with the formula producers, it will have to prove more than just unfair and unethical pricing. It will also have to go one step further from the previous antitrust battles against the formula producers, which the

government's trade watchdog, the FTC, lost. The likelihood of successful government antitrust action against the infant formula producers is questionable. Section One of the Sherman Antitrust Act, states that "conspiring in order to restrain trade is illegal". When Nestle tried to enter the US market, Abbott and Bristol-Myers executives met in order to fully enforce an exclusive *ethical advertising* policy, representing themselves in the media as the only true promoters of breast-feeding. Then they proceeded to print pamphlets to be displayed in doctors' offices questioning the effect of Nestle formula on babies' health. Simultaneously, the AAP sent 35,000 letters to its members denouncing Nestle's position and started the boycott of the Swiss company. Most of the academy members are physicians who continuously receive Abbott and Bristol-Myers's free shippings of formula and often receive cash payments as well. This is certainly more than a subtle message to Nestle and all other new entrants into the industry. Nevertheless, as we saw previously in this discussion, Nestle failed to prove that the formula industry leaders did anything illegal. This court decision raises doubt that the Sherman Antitrust Act is a strong enough legal base to indict the formula producers.

In addition to the high barriers to entry created by the controversy surrounding ethical advertising, the price following behavior of the industry is also at the center of the antitrust debate. This pricing behavior has resulted in deleting the savings funds for the state WIC programs. To this date, Abbott, Mead Johnson, and Wyeth have succeeded in persuading courts in the unilateral nature of their moves to set rebate offers for WIC within a cent or two of their competitors and simultaneously decrease them. Section One of Sherman Antitrust Act forbids meeting to arrange prices and severely punishing those who do. It also forbids communication that "may be viewed as an anticompetitive

exchange of information that could facilitate tacit collusion (Epstein, p.18)”. In the Senate hearing on Competitive Issues in Infant Formula Pricing, held on May 29, 1990, Ohio Senator Howard M. Metzenbaum, the chairman of the Subcommittee on Antitrust, Monopolies, and Business Rights, said:

The antitrust laws clearly prohibit competitors from agreeing on prices, and I believe that the same prohibitions should apply when competitors openly follow price increases time after time. (Senate Hearing 5/90, p. 2)

However, Senator Metzenbaum’s suggestion is not as easy to implement as it seems. The accusations of price fixing behavior and a lack of industry competition (FTC v. Abbott, 17 States v. Abbott) failed to seriously shake-up the structure on which the infant formula industry stood. At the time of Senator Metzenbaum’s speech, the Federal Trade Commission started its review process of the pricing behavior of the industry that resulted in FTC v. Abbott case. At that time, in 1990, most experts believed that the industry’s anti-competitiveness would be successfully defeated. The concept of *facilitating practices*, introduced to antitrust practice in 1970s, seemed like a sufficient legal ground to prosecute the infant formula firms. The facilitating practices doctrine was not used in courts during the 1980s, largely because the Reagan Administration saw it as a threat to the free market economy. With the inauguration of the Bush FTC administration, facilitating practices started to be seen as a relevant and strong enough indicator of anticompetitive behavior (Day, 1991).

Georgetown University Law School Professor and former FTC commissioner Robert Pitofsky commented that the use of the facilitating practices doctrine in the infant formula case is “a recognition that there is more to an anti-cartel policy than detection and enforcement against outright price fixing” (Day, p. H5). Many of Washington’s economists and legal analysts believed that the infant formula investigation would be the first one to succeed in using facilitating practices as a strong enough proof of price fixing. They were wrong. In *FTC v. Abbott*, the FTC failed to prove that the facilitating practices by the formula companies carried more weight than Abbott’s “plausible explanation” (Epstein, p. 18) of its business practices. Abbott’s successful argument before the court was that its actions in the market were influenced by the behavior of the other industry players, and that it did not have an intent to restrain competition.

The result of the FTC’s loss in court was that no additional and deserved money was provided for women and children in need (Epstein, 1996). A few years later, the seventeen states that brought action against Abbott and Bristol-Myers also received a relatively low settlement amount. However, these court cases did result in rebate bidding amounts being slightly higher (Epstein, 1996), as the producers probably feared more litigation. However, neither the FTC’s, Nestle’s, nor the states’ action significantly influenced how the industry operates.

In order to change the way the formula industry functions, an all-inclusive antitrust judgement would have to be won by the FTC. So far, both the Sherman Antitrust Act and the Federal Trade Commission (FTC) Act have been used for investigating the infant formula producers (Epstein, 1996). The FTC Act is considered to be in a better position than the Sherman Antitrust Act to prove anticompetitive behavior

because of its clause which also calls for consideration of “public values beyond simply those enshrined in the letter or encompassed in the spirit of the antitrust laws (Epstein, p. 7)”. Using the FTC Act, a facilitating practices doctrine would have to be proven to be present in the infant formula dealings in order to win a judgement against the companies. A minimum standard that establishes the presence of facilitating practices requires “that, absent a tacit agreement, at least some indicia of oppressiveness must exist such as (1) evidence of anticompetitive intent or purpose on the part of the producer charged, or (2) the absence of an independent legitimate business reason for its conduct (Epstein, p. 19, citing *E.I. Du Pont De Nemours & Co. v. FTC*, 729F.2d 128, 139, 2d Cir. 1984)”.

Recall the discussion on tacit collusion and the comparison to the soft drink industry from an earlier part of this essay. The presence of a tacit agreement is almost impossible to prove in the infant formula industry operations, since even without this type of unspoken agreement, the infant formula producers are able to match prices. So, if we assume the absence of a provable tacit agreement, the above listed requirements for establishing the presence of facilitating practices need to be fulfilled. Requirement (1), an evidence of anticompetitive intent, is difficult to establish. For example, Abbott can always argue that its industry actions are only an answer to the actions of, for example, Wyeth, Nestle, or Bristol-Myers, and therefore are without anticompetitive intent. The variations of this same contention, that the producers act like they do based on the actions of their competitors, could be used by the formula companies to refute the second requirement for establishing the presence of facilitating practices. Therefore, without the power to clearly constitute the presence of tacit collusion and taking into account the difficulty of proving that facilitating practices were used, there is no indication that a

successful anticompetitive litigation against the infant formula industry leaders is forthcoming.

POLICY SUGGESTIONS AND CONCLUSION

With the arrival of the Clinton administration, the FTC started concentrating more on vertical restraints and mergers than on price fixing and bid-rigging (Antitrust Homepage). It is hard to say when the doctrine of facilitating practices will again have a chance in court against the infant formula producers. Without the government's power to win a legal injunction against the formula producers, we can only speculate about possible actions to alter the market behavior of the formula producers.

There are many ways in which barriers to entry in the infant formula industry can be diminished. One way is to encourage direct advertising and begin to replace the *ethical advertising* policy. While direct advertising is not illegal in the industry, the practice is shunned strongly by the influential AAP, whose physician membership's endorsement is the key to the marketing success of the formula producers. A possible action by the government would be to order AAP to halt its disapproval of direct advertising. It is important to note here that it is questionable whether the government would have the legal authority to make these kind of orders to the AAP. A proof that ethical advertising interferes with consumer rights would have to be presented by the FTC in order for it to legally sanction AAP's practices. With direct advertising, the new entrants into the industry would not be disrupted in the very beginning by the conservative industry forces. Economic and market theories suggest that more

competition through advertising would follow. Abbott and Mead Johnson would have to find other ways to stay on the top, and we hope that one of their primary strategies would be to reduce prices. However, there are opinions that the direct marketing would result in raising advertising costs and consequently, increasing formula prices.

The infant formula industry spends around \$20 million for advertising annually (Levin, 1993). This is not a significant expenditure for an industry earning \$3 billion annually. This expenditure would increase dramatically if the producers would start, for example, television advertisement campaigns. And the cost of the product would rise as a result of that. But with direct advertising in place, the price increases would give a chance for smaller companies to introduce their discounted products into the market. Consumers would ultimately benefit from greater brand and price diversity.

Even if direct advertising were to become an industry standard, the tradition of ethical advertising would still have an important role in the market, as the industry leaders are the only ones able to afford covering (informing on medical benefits of their formula, giving free samples, hospital equipment, cash payments) an extensive web of physicians across the United States. So, with direct marketing in place and not disrupted, industry leaders would still stay well ahead of new entrants. A possible way to curb the powers of industry leaders would be to forbid gifts by producers to hospitals. As we have seen in the Puerto Rican case, help to hospitals in the form of gifts and cash payments has a serious weight in making decisions on which formula to promote. However, arguably significant price decreases that would follow the opening of the industry for new competitors would soon result in savings that would outweigh the ones obtained by gifts and cash payments provided by the industry leaders.

With the introduction of direct advertising, consumers would be directly exposed to formula marketing and, as the AAP suggests, breast-feeding might be discouraged. However, the rate of use of infant formula is at 80% (McDermott, 1990). Society might decide that the benefit from potential lower prices as a result of direct advertising outweighs the doubtful need for protection from advertising for 20% of the mothers who do breast-feed.

Most of us would agree that pressure should be put on infant formula producers to decrease prices and to stop the industry's enormous profits generated as a result of using the *ethical advertising* strategy. However, the formula producers are only one player in the game of ethical advertising. Physicians who choose to endorse one brand of formula over another are important associates of the producers in this marketing strategy. And while the producers are in the business for the *profits*, physicians are not. Their primary concern is to protect the well-being of mothers and their newborns. The gifts from formula producers influence physicians' behavior in recommending the product. So, if the society would like to curb the industry's power, it could start by regulating the *physicians'* actions with regard to promoting formula brands. If the hospitals were required to offer information on all formulas to the mothers, without letting gifts influence their preference, the formula industry might become more competitive.

Many of the above suggestions would extend the government's regulatory hand uncomfortably far and the strong legal victory against the infant formula producers is, once again, not foreseeable. But, after the decade of frequent court cases against them, the producers might be the ones to do something in order to satisfy the public's discontent with their industry practices. Although this paper argued that the strong judicial victory

against the producers is unlikely, there is still a threat of recurrent smaller-scale lawsuits that would result in significant legal costs for the industry leaders.

A possible action on the side of producers to try to keep the litigation off their doors and retain a long-run status quo in the industry might be the introduction of a practice similar to two-tier pricing. If Abbott and Bristol-Myers start marketing new formula brands at lower prices, a discount formula market would be created. These new brands would still have a top producer's name behind them, would have to be of regulated nutritional value, and would most likely appeal to the mothers in lower income brackets. Producers have experimented with this idea before. We mentioned that Wyeth created the discount formula Bonamil in 1995, but it did not succeed in capturing a notable market share. However, if the two present industry leaders, holding more than 85% of market, would decide to implement two-tier pricing and use their extensive marketing machinery to support this move, the public should be more responsive. As a result of this, market shares would not shift significantly, and even if they would, that would happen between Abbott and Bristol-Myers. The producers would be able to contend in court that they are working on providing lower prices of their product, which would to certain extent shield them from being successfully persecuted. And the consumers would also benefit with lower prices of formula.

The previous paragraphs are only variations on what might shake-up the anti-competitiveness of the infant formula industry. Nevertheless, this essay concluded that it is unlikely that an antitrust litigation will alter the infant formula industry behavior in the near future. Consumers and the WIC programs will probably enjoy some benefits from frequent legal battles and the producers' determination to improve their images. For now,

infant formula producers will continue to bring in enormous profits and be the most lucrative operations within their organizations. And employees at the state Women, Infant, and Children programs will continue with their everyday jobs of trying to save an additional dollar for poor mothers by devising *competitive bidding* or some other way of dealing with the major producers' prices. However, if the government and the FTC persist in investigating and trying the formula producers, these firms might share the fate of the computer industry's giant IBM. Never found guilty of an entire long list of accusations, but considerably weakened after 10 years of legal battles, IBM did not retain the power to continue practicing traditional industry behavior and lost its leadership role in the market.

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