

FOOD MARKETING PRACTICES AND ANTI-OBESITY POLICY: IMPACT ON SHAREHOLDER WEALTH

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A public policy report is examined for its potential to persuade changes in corporate marketing practices as a result of changes in shareholder wealth. Wealth effects of the 2003 United Nation's World Health Organization's technical report "Diet, Nutrition and the Prevention of Chronic Disease" are measured on a sample of 14 multinational food companies using standard event study methodology. Results show an adverse impact on shareholders' wealth around the WHO report issue date. The market correctly anticipated the costs and decreased profitability of the food industry in the presence of a public health anti-obesity offensive. Corporate response required defensive marketing behavior addressing reformulation, label revision, repackaging, limitations in advertising and promotion practices and endurance of increased costs of taxation and restricted distribution. Issuing a high level policy document both anticipated and triggered food industry behavior to mitigate marketing practices that may contribute to obesity. It suggests that a public policy report can impact shareholder wealth and thereby may have the potential to motivate firm level behavior without the implementation of regulation.

INTRODUCTION

Public policy attention to the growth in obesity, on a global scale, reached a critical mass in spring 2003 with the World Health Organization's release of their technical report "Diet, Nutrition and the Prevention of Chronic Disease." While not the first policy document on the topic it was the report with both the credentials and direct message to catapult the issue into global headlines. It underscored the gravity of the issue, delineated probable causes for the epidemic and proposed necessary actions that went beyond the public health arena to include marketing practices. As such its release becomes an event worthy of study for its impact on the marketplace and as an example of public policy's potential to precipitate marketplace adjustments in shareholder wealth because of anticipated changes in the corporate business and regulatory environment. In this instance a public policy report is examined for its potential to persuade changes in corporate

marketing practices as a result of changes in shareholder wealth precipitated by the report's release.

OBESITY AS A GLOBAL POLICY ISSUE

In the present decade, the problem of obesity emerged as a global health concern and is receiving an accelerating amount of attention in the governmental and public health arenas. The World Health Organization (WHO) highlighted the magnitude of the problem by declaring obesity a worldwide epidemic in 2000. Concerns focus on the significant impact of obesity on quality of life and healthcare costs. The global problem of obesity is framed as the consequence of more sedentary lifestyles and the increased access and consumption of energy dense foods such as carbonated soft drinks, sweets, and snack foods, in particular. Increasingly, the debate is focusing on the food marketing practices of the major food industry corporations. The role of the food industry in creating and sustaining an obesity epidemic is widely discussed and studied on a global level at scientific, medical and public policy meetings and reports (USDHHS 2001; WHO 2000, 2003) and has caught the attention of the

popular press as well (IFIC 2004). It spawned several popular nonfiction books (Brownell 2004; Nestle 2002; Crister 2003) and a successful documentary film entitled "Super Size Me" directed by Morgan Spurlock.

While obesity was receiving public policy and academic attention early in the decade, the food industry, through their lobby groups, dismissed the concerns as exaggerated and silly, as did the general popular attitude. A few well-publicized lawsuits directed at fast food operators were filed in 2002 and dismissed as frivolous. (*Pelman v. McDonald's*). The first widely acknowledged attention to the obesity situation occurred with the March 3, 2003 release of the United Nation's World Health Organization's technical report, "Diet, Nutrition and the Prevention of Chronic Disease." This report was called "a time bomb for the food industry" by industry analysts (Langlois, et al. 2003) while a respected industry trade publication declared "To the food industry, the report is terrifying in its implications...governments will be under pressure to put the WHO's recommendations into practice." (Benady 2003) The report ratcheted obesity up governmental policy agendas, championed public policy intervention and cited food marketing practices as likely causes of the obesity epidemic.

Marketing Factors the World Health Organization Report Associates with Obesity

Within a broader set of etiological factors impacting increased risk for weight gain and obesity, the WHO Report on Diet Nutrition and Health identified the following food industry specific etiological factors: "High intake of energy-dense micronutrient-poor foods" as a convincing factor promoting weight gain and obesity; the "Heavy marketing of energy-dense foods and fast-food outlets" and "High intake of sugars-sweetened soft drinks and fruit juices" as probable factors for increased risk of weight gain and obesity; and "Large portion sizes" as a possible factor for increased risk of weight gain and obesity. It went further to highlight the marketing practices targeting children as "causative," "thus becoming a

potential target for interventions". It discussed "supersize" portions, the energy-dense, micro-nutrient-poor nutritional profile of heavily marketed food and beverage products, and increasingly "obesogenic" environments which can be extrapolated to suggest modified food choices in publicly controlled environments such as schools. The report addressed marketing driven issues of food product formulation, segmentation and advertising practices, and food delivery channels.

One month later, on April 16, 2003, an economic report issued by JP Morgan, "Obesity: the big issue" (Langlois, et al. 2003), outlined the potential economic impact of obesity issues on shareholder value. The JP Morgan report heavily referenced the WHO Technical Report and drew parallels between obesity's impact on public health and the earlier policy and regulatory responses to smoking. The JP Morgan report identified the portion of each company's product portfolio in food and beverage, and then ranked the companies by the percent of their product portfolio considered vulnerable to identified marketing criticisms associated with possible weight gain or obesity. The two reports fanned growing media frenzy over an alleged obesity crisis, with the topic becoming the lead news story involving food in 2003, representing 15 percent of the monitored news media for food in the U.S. (IFIC 2004)

Examining the Impact of Anticipated Marketing Costs on Shareholder Wealth

This paper measures the changes in shareholders' wealth of large multinational firms in the food industry around the release of the reports by the WHO and JP Morgan in 2003. These reports anticipate regulatory policies aimed at moderating obesity and intensifying legal threats in the market place. Testing the stock price reaction of affected food industry firms will provide empirical evidence of the impact on industry equity values from changing attitudes on obesity signaled by the reports. It also measures the stock market's assessment of the role that anticipated anti-obesity regulation and litigation will have in

restricting food marketing practices which may limit the future growth and profitability of these companies and the food industry. We find significantly negative abnormal stock price reactions in a sample of fourteen multinational food manufactures identified by JP Morgan as having exposure to anticipated obesity related costs in marketing, consumer education, and increased regulation.

The total dollar loss in equity values for the firms that can be attributed to the release of the two reports is estimated at \$16.9 billion. The market has assessed that obesity concerns and the perceived role of food marketing practices in fostering an epidemic can no longer be dismissed by the food industry. The expectation of significantly large costs imposed on the industry by additional marketing related restriction and regulation on labeling, vending, promotion and advertising should be of interest to policy makers and to investors.

This study contributes to an emerging stream of literature that examines the relationship between firms' marketing practices and shareholders' wealth. Examples include Pandey, Shanahan and Hansen (2005) on stock price impact of firms' inclusion on the diversity elite list, Cornwell, Pruitt, and Clark (2005) on the association between Major-League Sports' sponsorship announcements and the stock prices of sponsoring firms, Cornwell, Pruitt, and Clark (2004) on auto racing sponsorships and shareholder wealth, Pauwels and colleagues (2004) on the effect of new product introductions and promotional incentives on firm value, Mathur and Mathur (2000) on the effects of green marketing strategies and wealth effects, and Miyazaki and Morgan (2001) on changes in market value of firms sponsoring the Olympic Games.

Background: Implications of the Obesity Epidemic on Corporate Costs

Numerous studies have addressed the costs of obesity to society. As early as 2001 the US Surgeon General David Satcher was highlighting obesity as a major health concern

and declaring "Overweight and obesity may soon cause as much preventable disease and death as cigarette smoking" in his "Call to Action to Prevent and Decrease Overweight and Obesity". The healthcare costs of obesity are tallied and reported by numerous sources (Seiders and Petty 2004; Anderson, et al. 2003; Strum 2002) and show the large scale and acceleration of medical costs related to overweight and obese conditions. The costs of obesity are quickly approaching the costs of smoking. The Surgeon General's estimate for the total costs of obesity is \$117 billion compared to the \$140 billion cost of smoking. (Langlois et al. 2003) The concern is reflected in the report that obesity dramatically increases healthcare and medication costs, 36 percent and 77 percent respectively, and is a pernicious creeping expense since obesity's impact is felt in a time lag. (Fitch et al. 2004) The economic impact of medical costs for obesity's co-morbidity chronic diseases will be realized at an accelerating rate in the near future as the newly obese age. The future costs for obesity are viewed as exponential and generate the urgent concern to mitigate the epidemic at state, national and worldwide levels of government.

Causes for obesity are debated and researched at length. They are multi-factorial and range from increased computer use and TV viewing to larger restaurant portions and ubiquitous food marketing practices. Of particular note is the focus on food's caloric and nutritional content, package and serving sizes, and advertising and promotion practices. (Seiders and Petty 2004; Hill and Peters 1998)

The obesity debate continues to return to the fundamental issue of food availability and consumption, which targets the food industry as a major identifiable entity contributing to the epidemic. This position figured in the introduction of lawsuits in 2002 targeting fast food providers and pivoted on misleading marketing practices regarding the food's nutritional value and the targeting of children in advertising and promotion practices. (*Pelman v. McDonald's Corp.* 2003) The lawsuits prompted extensive comparison of the food

industry obesity situation with the tobacco industry's restricted marketing practices, lengthy litigation and the resultant prodigious settlements. (Parloff 2003)

Again, similar to tobacco, there is a movement to tax the vices of high caloric foods, particularly snack foods, and carbonated beverages, on a state level. Likewise there are proposals to tax the advertising of such foods as well as their sale. Whether pursued directly or indirectly, the taxation of these foods will either increase their cost to the consumer thus limiting volume growth or decrease margin if the manufacturer chooses to absorb the cost of the consumer tax. (French 2003; Jacobson and Brownell 2000)

The social and economic costs of obesity are huge and deserving of attention and action on a public policy level. Potential public policy responses, plus legal redress for harm in the private sector, foretell enormous direct and indirect potential costs for companies which manufacture and market food. While several facets of food marketing behavior are criticized the bottom line leads to decreased food consumption per capita of high caloric foods, thereby eliminating the traditional volume based source of food industry growth. Challenges that arise for the food industry from the focus on the obesity epidemic include potential increased marketing and legal costs from regulatory compliance, product development and reformulation, labeling and consumer education, packaging, public relations and litigation expenditures. Detailed public exposure to the industry's marketing and promotion practices may disillusion consumers and erode brand trust. Restrictions on advertising, promotion and channel access, as represented by product removal from school food service and vending channels, will contribute to volume loss. An exhaustive review of these concerns is presented by Seiders and Petty 2004. The expectation is that rising costs and restricted opportunities for volume growth will result in lower profitability for the industry which will adversely impact shareholder wealth.

THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

Scheraga and Calfee (1996) examine the impact of information and regulation on the welfare of the cigarette industry and ascribe two advantages to the use of *event analysis*. First, they credit stock prices as the surest guide to measure the anticipated impact of the benefits and costs of the event on individual firms and the industry. Second, they suggest that market valuations anticipate later developments that will impact the future cash flows of firms. Lovett and MacDonald (2005) present a conceptual framework that identifies the relationship between marketing practices and a firm's market value. Examples of empirical studies that address the impact on marketing practices include Pandey, Shanahan and Hansen (2005), Cornwell, Pruitt, and Clark (2004, 2005), Pauwels and colleagues (2004), Miyazaki and Morgan (2001), Mathur and Mathur (2000), Ghani and Childs (1999) and Agrawal and Kamakura (1995). Key to the obesity related events under review are the competitive impact of potential regulation and litigation plus threatened restriction of marketing practices. These competitive factors can be further extrapolated into the future to foretell product reformulation, adjusted labeling and diminished market access, in turn, lowering future expected earnings of the food industry.

To maintain competitive positions in the market, firms will accelerate new product development and incur added costs to document health claims and educate consumers. In view of these concerns, capital market participants may seek to discount a firm's future value in anticipation of such cost and margin pressures. Therefore, it is predicted that anticipated regulation impacting corporate marketing practices will have an adverse effect on the shareholders' wealth of food firms.

Two widely read and credible documents, one sourced from the public policy sector and one from the private financial sector, were released in March and April 2003 and addressed the obesity epidemic and the role of the food

industry as a contributor. We identify March 3, 2003, the release date of the WHO's Technical Report "Obesity: Preventing and Managing a Global Epidemic," as the primary event date of our study. It is labeled as day 0. We also examine a second event date, April 16, 2003, the release date of the J.P. Morgan economic report "Obesity: the big issue" as providing further evidence in support of our primary hypothesis. Both reports caught the industry audience by surprise with their specificity and direct connection of industry products and marketing practices to the obesity epidemic. Thus, it is reasonable to assume that both, the issuance of WHO's report highlighting the role of the food industry in the changing obesity environment and the analysts' expectations regarding the obesity concerns' potential impact, are likely to be incorporated into stock prices around these two events. We expect investors to respond unfavorably toward the food industry resulting in negative average abnormal security returns behavior around these two events.

The following four hypotheses (stated in the alternative forms) are tested.

Event 1 - Issuance of the World Health Organization Report

H₁ (average abnormal returns test):
The World Health Organization's report on obesity had a significant negative impact on the average security returns of large multinational food companies.

It is quite likely that value relevant information regarding anticipated conclusions of the WHO report impacting the marketing strategies of the food industry is impounded in stock prices some days before its release date. In fact, prior evidence in financial literature supports this *information-leakage* phenomenon. The use of the cumulative abnormal returns (CAR) metric would provide us the opportunity to pick abnormal activity (if there is any) over different trading intervals. The CAR can be interpreted as the firms' average deviation of returns from their normal market relationship. In the

absence of new information, we expect CAR to be equal to zero on average. A non zero and significant and negative CAR over different selected intervals would show that shareholders experienced significant wealth loss over these intervals as proposed below:

H₂: (cumulative abnormal returns test):
The World Health Organization's report on obesity had a negative significant impact on the average cumulative security returns of large multinational food companies.

Event 2 - Issuance of the J. P. Morgan Obesity Report

H₃: (average abnormal returns test):
The J. P. Morgan obesity report identifying food manufacturers' vulnerability to increased regulation in the changing obesity environment had a negative significant impact on the average security returns of large multinational food companies.

H₄: (cumulative abnormal returns test):
The J. P. Morgan obesity report identifying food manufacturers' vulnerability to increased regulation in the changing obesity environment had a negative significant impact on the average cumulative security returns of large multinational food companies.

Sample Selection

The initial sample was based on a list of 16 food manufacturers identified in the April 16, 2003, J.P. Morgan economic report "Obesity: the big issue" as representative sample of the food industry. Two firms were dropped because of non-availability of stock price data. We use a final sample of 14 food firms as the basis to test the hypotheses developed in the prior section.

EVENT STUDY RESULTS

H₁: Abnormal Returns Test

As shown in Table 1, Panel A, a significantly negative stock price reaction is observed a day after the event date when the WHO obesity report was released in Switzerland on March 3, 2003. As Europe is ahead of the U.S. by several time zones, trades made on information contained in the report would have occurred on the U.S. stock exchanges on day +1. The reported average abnormal return of -1.118 percent is significantly different from zero at conventional levels (Z -value = -2.85, $p \leq 0.01$). In addition, a significantly higher percentage of abnormal returns on day +1 are negative (85.7 percent). These results indicate that the report had a significant negative wealth effect on the shareholders of 14 large U.S. food firms once the impact of the report was fully realized by the market participants in the United States. We test this observation further by employing the cumulative average returns metric as presented in Panel B of Table 1.

H₂: Cumulative Average Returns Test

As shown in Table 1, Panel B, the food firms experience a significant negative CAR for day -1 through day 1 test periods. The CAR has a Z -value of -2.07 and p -value ≤ 0.05 . In addition, 71.4 percent of food firms experience negative abnormal price reactions with a p -value ≤ 0.05 . This significant cumulative negative wealth effect persists over the remaining four larger event windows: day -2 through day +2 (Z -value = -1.73, p -value ≤ 0.10); day -3 through day +3 (Z -value = -2.50, p -value ≤ 0.025); day -4 through day +4 (Z -value = -2.40, p -value ≤ 0.01); day -5 through day +5 (Z -value = -3.02, p -value ≤ 0.01). The results are consistent with hypothesis H₂ and suggest that the announcement had an adverse overall wealth effect for the sample firms.

Measuring Wealth Effects in Dollars

To provide some perspective on the loss in shareholders' wealth, an abnormal dollar loss is

calculated for the 14 food industry firms by multiplying the market value of each firm's equity prior to the release of the WHO obesity report by the firm's CAR for day -1 to day 1. This three day interval appears to best capture the abnormal stock price behavior associated with the event. The calculations are reported in Table 2. In aggregate, the food firms in the sample experienced a total abnormal dollar loss of \$8.9 billion. This represents the dollar loss in shareholder value that can be attributed to the information conveyed by the report and its consequences as assessed by the market. The abnormal dollar loss as a percentage of the sample firms' total pre-event equity value is 2 percent.

H₃: Abnormal Returns Test

Table 3 reports the stock market reaction to the issuance of the J.P. Morgan's analysts report identifying the vulnerability of large multinational food manufacturers to increased regulation in the changing obesity environment. April 16, 2003, the report's date of issue, establishes day 0 in event time. Hypothesis H₃ predicts that multinational food firms will be adversely impacted by anticipated anti-obesity related public policy and regulatory changes that increase marketing costs. Supporting the prediction of hypothesis H₃, day 0 reports a negative average abnormal return of -1.524 percent which is significantly different from zero at conventional levels (Z -value = -3.95, $p \leq 0.01$). Day 0 also exhibits a significantly higher percentage of abnormal returns that are negative (92.9 percent). The evidence indicates that the issuance of the J.P. Morgan report on obesity had a significant negative wealth impact on the shareholders of 14 large multinational food firms.

H₄: Cumulative Average Returns Test

Again we choose intervals for the CAR that appear to best capture the abnormal stock price behavior associated with the event. As shown in Table 3, Panel B, the food firms experience a significant negative CAR for day -1 through day 0 test periods. The CAR has a Z -value of -

TABLE 1
Daily Average Abnormal Returns (AR), Proportions of Negative Returns, Daily Average Cumulative Average Abnormal Returns (CAR), and Proportions of Negative Returns of Firms Around the Issuance of the World Health Organization Report
Event 1 – WHO Report (March 3, 2003)

Panel A:
Daily Average Abnormal Returns (AR) and Proportions of Negative Returns [N=14]

Event Day	AR%	Z-Value	% Neg
-5	-0.547	-1.30 (0.195)	78.6
-4	0.062	0.04 (0.968)	42.9
-3	-0.715	-1.81 (0.071)	100.0***
-2	0.286	0.73 (0.466)	35.7
-1	-0.547	-1.51 (0.132)	92.9***
0	0.174	0.76 (0.445)	50.0
1	-1.118	-2.85 (0.004)***	85.7***
2	-0.448	-1.01 (0.314)	64.3
3	-0.350	-0.93 (0.354)	64.3
4	-0.139	-0.62 (0.533)	50.0
5	-0.699	-1.54 (0.125)	85.7***

Panel B:
Daily Average Cumulative Average Abnormal Returns (CAR) and Proportions of Negative Returns

Trading Interval	CAR%	Z-Value	% Neg
DAY -10 THRU 10 DAY	-1.203	-0.64 (0.524)	57.1
DAY -5 THRU 5 DAY	-4.040	-3.02 (0.003)***	85.7***
DAY -4 THRU 4 DAY	-2.795	-2.40 (0.017)**	92.9***
DAY -3 THRU 3 DAY	-2.718	-2.50 (0.013)***	78.6***
DAY -2 THRU 2 DAY	-1.653	-1.73 (0.084)	78.6*
DAY -1 THRU 1 DAY	-1.491	-2.07 (0.038)*	71.4**

*Significant at $p \leq .05$. **Significant at $p \leq .025$. ***Significant at $p \leq .01$.

2.473 and p -value ≤ 0.05 . In addition, 100 percent of food firms experience negative abnormal price reactions with a p -value ≤ 0.01 . The results are consistent with hypothesis H_4 and indicate that the issuance of the J.P. Morgan report had an adverse overall wealth effect for the sample firms.

Measuring Wealth Effects in Dollars

Table 4 reports the abnormal dollar loss in equity values accruing to the shareholders of the samples 14 large multinational food firms that can be attributed to the J.P. Morgan report. The abnormal dollar loss is calculated by multiplying the market value of each firm's

equity prior to the issuance of the J.P. Morgan obesity report by the firm's abnormal return on day 0. As shown in Table 4, the aggregate wealth loss for shareholders on event day 0 is around \$8 billion. This figure can be added to the \$8.9 billion abnormal loss associated with the release of the WHO report to yield a total loss of \$16.9 billion, which measures the market's assessment of the impact that changing attitudes toward obesity and its public policy ramifications will have on the future prospects of large multinational food firms. Losses of such magnitude might be deemed economically significant by government policy makers and capital market investors, as well as by the stakeholders (shareholders, managers,

TABLE 2
Wealth Effects over Three Day Event Period: Day -1+ Day 0 + Day 1 (In Millions)
Event 1: Issuance of the WHO Report (March 3, 2003) - [N=14]

Firm	Shares	Price	Market Value	Abnormal Return	Loss/Gain	Contribution+
Hershey	132.50	63.31	8388.58	-0.02604	-218.44	-0.00049
Cadbury	514.25	19.46	10007.31	0.02554	255.59	0.00057
Coca-Cola	2463.26	39.22	96609.06	-0.03594	-3472.13	-0.00779
PepsiCo	1718.62	37.65	64706.04	0.00427	276.29	0.00062
Kraft	1732.00	28.82	49916.24	-0.03906	-1949.73	-0.00437
Kellogg	410.83	28.74	11807.25	-0.02066	-243.94	-0.00055
Wrigley	225.00	52.80	11880.00	-0.02263	-268.84	-0.00060
General Mills	367.70	41.86	15391.92	-0.02182	-335.85	-0.00075
HJ Heinz	352.70	29.50	10404.65	-0.02020	-210.17	-0.00047
Campbell	410.50	20.22	8300.31	-0.01272	-105.58	-0.00024
Unilever	727.86	34.04	24776.35	0.01989	492.80	0.00110
Danone	635.65	23.18	14734.37	0.02385	351.41	0.00079
Sara Lee	777.10	19.09	14834.84	-0.05221	-774.53	-0.00174
P&G	1297.74	80.31	104221.50	-0.02605	-2714.97	-0.00609
TOTAL	445978.42		-8918.084	-0.02000++		

+Loss relative to total value of all affected firms

++Value weighted abnormal return

Definitions of Variables:

- Market Value – market value of the firm's equity prior to the announcement. Total is the total value of all firms in the sample.
- Abnormal Return – abnormal return from the event study for firm. The average abnormal return we report is an equally weighted measure of the impact of the event.
- Loss/Gain – abnormal dollar loss/gain – it's the absolute dollar impact of the event on shareholder value. It is calculated by multiplying each firm's market value by its abnormal return. Total is the total dollar impact of the event.
- Contribution – calculated as each firm's dollar loss/gain divided by the total dollar impact of the event. It measures each firm's contribution to the total dollar impact of the event and it depends on size of the firm and the impact of the event on the firm. Total can be interpreted as a value of weighted abnormal return.

employees, suppliers, creditors) of the affected firms.

DISCUSSION: INDUSTRY BEHAVIOR MIRRORS POLICY EXPECTATIONS

Two widely read and credible documents, one sourced from the public policy sector and one from the private financial sector, were released in March and April 2003 and addressed the obesity epidemic and the role of the food industry as a contributor. Both publications had a significant negative impact on the shareholder

wealth across a set of fourteen large publicly traded multinational food companies. This suggests that whether the food industry wishes to consider implications that its marketing practices are a primary contributor to obesity as appropriate or not, these implications are perceived in the market place as causing legitimate risks to future earnings.

Impact on Marketing Practices

The marketplace has seen substantial response in marketing practices from the food industry

TABLE 3
Daily Average Abnormal Returns (AR), Proportions of Positive/Negative Returns
of Firms Affected by J.P. Morgan Research Report on Obesity

Event 2 – J.P. Morgan Research Report – Obesity: The big issue (April 16, 2003)

Panel A: Daily Average Abnormal Returns (AR) and Proportions of Positive/Negative Returns
[N = 14]

Event Day	AR%	Z-Value	% Neg
-5	0.205	0.52 (0.603)	42.9
-4	-0.210	-0.46 (0.648)	50.0
-3	0.437	1.17 (0.242)	28.6
-2	0.651	1.52 (0.129)	21.4
-1	-0.157	-0.30 (0.763)	57.1
0	-1.524	-3.95 (0.000)***	92.9***
1	1.241	2.83 (0.005)***	7.1
2	-0.465	-1.12 (0.263)	78.6**
3	0.673	1.45 (0.146)	35.7
4	-0.705	-2.06 (0.039)**	85.7***
5	-0.815	-1.96 (0.050)**	64.3

Daily Average Cumulative Average Abnormal Returns (CAR), and Proportions of Negative Returns

Trading Interval	CAR%	Z-Value	% Neg
DAY -3 THRU 0 DAY	-0.593	-0.78 (0.435)	71.4
DAY -2 THRU 0 DAY	-1.029	-1.58 (0.115)	71.4**
DAY -1 THRU 0 DAY	-1.681	-3.01 (0.003)***	92.9***
DAY 0 THRU 1 DAY	-0.282	-0.79 (0.429)	78.6
DAY 0 THRU 2 DAY	-0.747	-1.29 (0.196)	85.7*
DAY 0 THRU 3 DAY	-0.074	-0.39 (0.695)	64.3

*Significant at $p \leq .05$. **Significant at $p \leq .025$. ***Significant at $p \leq .01$.

since these “bombshells” were released in 2003. Many food manufacturers have engaged in considerable product reformulation, new labeling, new portion-control packaging, consumer education and in some cases self – limited advertising to children. Several companies have initiated philanthropic efforts to support physical activity programs for children. A survey of food manufacturers in summer 2005 inquired about the introduction of new health and wellness initiatives and reported extensive reformulation, promotion, and partnerships with community health initiatives. A reported 2,749 products offer more nutrition information on the label. (Collier Shannon Scott 2005) All of these efforts involve increased costs of business for the individual companies.

The food industry, through trade organization activities, responded with substantial increases in consumer education on dietary guidance and the importance of exercise. It spawned and supported organizations such as the American Council of Fitness and Nutrition to promote consumer education and has proposed expanded self regulation for advertising food to children through CARU (Children’s Advertising Review Agency). (Molpus 2005)

Public Policy Response addressing Food Marketing Practices

On the public policy level in response to the obesity epidemic the FDA is considering revised Nutrition Facts Panel criteria emphasizing caloric content and has examined portion sizes. Several agencies under the Department of Health and Human Services’

TABLE 4
Wealth Effects on Event Day 0 (In Millions)
Event 2: Issuance of the J.P. Morgan Research Report – Obesity: The big issue (April 16, 2003) [N=14]

Firm	Shares	Price	Abnormal Return	Loss/Gain	Contribution+
Hershey	132.50	63.42	-0.0247	-207.56	-0.00044
Cadbury	514.25	21.59	-0.02515	-279.23	-0.00059
Coca-Cola	2463.26	41.71	-0.05331	-5477.21	-0.01151
PepsiCo	1718.62	40.02	-0.301044	-718.05	-0.00151
Kraft	1732.00	28.23	0.01368	668.87	0.00141
Kellogg	410.83	30.44	-0.00999	-124.93	-0.00026
Wrigley	225.00	57.43	-0.01793	-231.69	-0.00049
General Mills	367.70	44.79	-0.011	-181.16	-0.00038
HJ Heinz	352.70	29.17	-0.0145	-149.18	-0.00031
Campbell	410.50	21.62	-0.0102	-90.53	-0.00019
Unilever	727.86	38.29	-0.00897	-249.99	-0.00053
Danone	635.65	27.15	-0.0145	-250.24	-0.00053
Sara Lee	777.10	19.17	-0.02353	-350.53	-0.00074
P&G	1297.74	88.58	-0.00325	-373.60	-0.00078
TOTAL WEALTH LOSS				-8,015.02	-.01684++

+Loss relative to total value of all affected firms

++Value weighted abnormal return

Definitions of Variables:

- Market Value – market value of the firm's equity prior to the announcement. Total is the total value of all firms in the sample.
- Abnormal Return – abnormal return from the event study for firm. The average abnormal return we report is an equally weighted measure of the impact of the event.
- Loss/Gain – abnormal dollar loss/gain – it's the absolute dollar impact of the event on shareholder value. It is calculated by multiplying each firm's market value by its abnormal return. Total is the total dollar impact of the event.
- Contribution – calculated as each firm's dollar loss/gain divided by the total dollar impact of the event. It measures each firm's contribution to the total dollar impact of the event and it depends on size of the firm and the impact of the event on the firm. Total can be interpreted as a value of weighted abnormal return.

purview have launched committees to study and propose policy on food marketing practices to children, particularly advertising and promotion practices. The committees are charged with examining regulatory policy needs, either for legislative implementation or for the avocation of industry self-regulation. Many states and localities have introduced "fat taxes" and have restricted the sale of high caloric foods and beverages in schools and in vending machines.

LIMITATIONS AND IMPLICATIONS FOR FUTURE WORK

This study is limited to the examination of fourteen publicly traded multinational food companies traded on the U.S. stock exchanges only. This study examines the costs and benefits within the private sector which impact the large multinational food companies studied and it does not address societal benefits that may accrue from the implementation of regulatory policy and the accompanying market incentives to improve nutritional value in food products and promotional marketing practices pursued by the food industry.

The impact of increased regulation of the food industry, directly and indirectly, bears continued study. The prolonged rulemaking and case law litigation experienced after lengthy pursuit for approval of NLEA health claims for inclusion on the food label in the 1990s illustrates that new regulation can sometimes lead to difficult implementation and market confusion and hesitation. (Wrick 2005; Walsh, Lietzan and Hutt 2005) The exhaustive framing of the obesity debate by Seiders and Petty (2004) called for several research platforms, including examination of marketplace actions and regulatory incentives. This study examines the impact of a high profile public policy document on marketplace assessment of shareholder wealth for fourteen US based multi-national food companies. Accordingly it is limited to this publicly available multi-national sample. Further examination of individual corporate behavior addressing the obesity issue and its accompanying shareholder wealth performance would be merited.

The market correctly anticipated the costs and decreased profitability of the food industry in the presence of a public health anti-obesity offensive. The defensive response required numerous marketing responses including reformulation, label revision, repackaging, limitations in advertising and promotion practices and the endurance of increased costs of taxation and restricted distribution. Whether imposed directly as regulation or obliquely as self-regulation, the end result was similar.

In summary, this study demonstrates the market's savvy assessment in 2003 of the impending costs for companies to respond to the obesity crisis and the resultant effect on shareholder wealth. The study also contributes to a growing stream of research documenting the impact of marketing practices on shareholder wealth. Issuing a respected high level policy document both anticipated and triggered food industry behavior to mitigate marketing practices that may contribute to obesity. It accomplished this without instituting regulation but by taking the dialogue

to a wide-ranging and highly public global forum.

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