Super Size Me and Stock Prices

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Abstract

We examine the impact of the release of "Super Size Me," a movie critical of the nutritional aspects of McDonald's restaurants, on the stock prices of McDonald's and Wendy's corporations. Consistent with investors impounding information from non-traditional sources, we find a large and significant valuation effect for both firms. A similar effect was documented for the movie "Fast Food Nation," but none was observed around the release of either "Roger and Me" or for "Walmart: The High Cost of Low Price." These results may indicate that investors believe that health-related issues have greater business impact than other aspects business practice.

I. Introduction

The Efficient Markets Hypothesis underlies much of our understanding of finance. One of the most tested theories in finance is the degree to which investors impound information into share price. Thousands of studies show that investors readily use financial information such as earnings, dividends, stock issuances, and merger announcements to make buy and sell decisions, and thereby determine the market prices of securities. The various types of information that investors use to inform their decisions remains an area of continuing interest. In this paper we show that investors use information far beyond the traditional sources. We examine the impact of the release of the movie *Super Size Me* on the stock prices of fast food franchises. The movie examines obesity, nutritional health, and the marketing of fast food to children by having the protagonist eat every meal for one-month at a McDonald's restaurant. Using standard event study methodology, we find significant negative abnormal returns in response film festival releases of the film as well as its general release for both McDonald's and Wendy's restaurants. Our results demonstrate that the public information upon which semi-strong market efficiency is based extends beyond the financial page of newspapers into movie theatres. The study also documents the importance that investors believe consumers place on the health ramifications of their food choices. Interestingly, we do not find that other muckraking films impact the valuations of their targets when the films' focus on issues other than health.

II. Super Size Me

Super Size Me (2004) is the visual chronicle of director Morgan Spurlock's month-long experiment regarding the effects of an exclusively fast-food diet. During February, 2003, Spurlock followed a nothing-but-McDonald's diet, filming his experience to produce what became an Academy Award nominated documentary (the movie was nominated for Best Documentary in 2005). While his effort won him the Best Director Award at the well-known

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Sundance Film Festival in 2005, it also almost ruined his health. Aside from gaining over twenty pounds during the month, his cholesterol rose, and he developed liver and digestive problems.

The movie not only captured the attention of film critiques, but apparently McDonald's Corporation took notice as well. As noted in the *Wall Street Journal* "Around the film's debut, McDonald's removed the super-size option from its menu although it said the decision wasn't prompted by the film" (Adamy and Gibson, 2006).

Our interest centers on whether investors believed that consumers would alter their eating habits as a result of the film and the attention it focused on the relationship between fast-food and America's growing obesity problem. Did the movie's topic, appeal, and notoriety contribute information that the market impounded into price?

III. Methodology

To answer this question, we examined the reaction of both McDonald's and Wendy's shares to several important dates surrounding the motion picture. Dates of interest included the premier at the Sundance Film Festival (January 14, 2004), the opening at the South by Southwest Festival (March 14, 2004), the Philadelphia International Film Festival (April 10, 2004), and the nationwide US opening of the movie on May 7th.

Daily stock price data was collected for McDonald's and Wendy's. Stock betas were computed using daily data and the S&P 500 Index for 262 immediately preceding the first release date (January 17, 2004). Similar calculations were done utilizing the NYSE Composite Index with no material difference in the results as reported. Abnormal returns were computed by subtracting the expected return (Beta times Index return) from the 5-day raw return for the company. Statistical tests were based on a standard error using non-overlapping 5-day abnormal returns for the beta estimation period.

IV. Initial Results

As reflected in Table I, the negative reaction of McDonald's investors is evident beginning with the introduction of the movie at the Sundance Film Festival, while Wendy's investor response seemed to gain negative momentum from the initial screening until the general release of the picture about five months later. The abnormal return of McDonald's on April 10th (-6%) translates into a loss of investor wealth during that five day period approximately equal to $2 billion, given the firm's capitalization of nearly $35 billion on April 7th, the last trading day prior to the Philadelphia International Film Festival. Cumulatively, the effect of the four *Super Size Me* events cost the fast food company's shareholders about 12% of their investment or about $4.5 billion. This staggering amount implies an anticipated loss of sales of at least $45 billion in the future using the firm's 10% net profit margin as a rough estimate of its cash flows generated per dollar of revenue and ignoring the time value of money. Following the lead of *The Economist*, using a Big Mac hamburger metric, that's about 20 billion burgers in anticipated lost sales. Clearly, the market recognizes the film's ability to raise customer awareness of the negative health consequences of eating fast food and the detrimental effect this awareness will have on the cash flow generating capacity of restaurant chain.

Table I: McDonald's Stock Reaction to Premiers of *Super Size Me*

	McDonald's	5-day Raw Return	5-Day Expected Return	5-Day Abnormal Return	t-statistic
17-Jan-04	(Sundance Film Festival)	0.0041	0.0068	-0.0027	-1.9617
13-Mar-04	(South by Southwest Film Festival)	-0.0234	0.0115	-0.0349	-9.2895
10-Apr-04	(Philadelphia International Film Festival)	-0.0691	-0.0082	-0.0609	-15.1909
7-May-04	(USA limited)	-0.0439	-0.0127	-0.0312	-8.4437

Table II: Wendy's Stock Reaction to Premiers of *Super Size Me*

	Wendy's	5-day Raw Return	5-Day Expected Return	5-Day Abnormal Return	t-statistic
17-Jan-04	(Sundance Film Festival)	0.0115	0.0066	0.0050	0.1734
13-Mar-04	(South by Southwest Film Festival)	0.0049	0.0111	-0.0062	-2.3318
10-Apr-04	(Philadelphia International Film Festival)	-0.0378	-0.0080	-0.0298	-7.6196
7-May-04	(USA limited)	-0.0693	-0.0123	-0.0570	-13.7254

V. Some Additional Tests

These results support the notion that consumers' health concerns raised by *Super Size Me* will affect their behavior, which, in turn, will affect financial performance. To confirm this hypothesis, we tested the market's response to the Cannes Film Festival premier of a second muckraking movie, *Fast Food Nation*. The May 18, 2006 event was well publicized with an article appearing on page B-1 of the *Wall Street Journal* (Adamy and Gibson, 2006) and was apparently considered a threat and taken seriously by the industry. Based on the novel of the same name, aspects of the picture's plot bear a striking similarity to McDonald's: the restaurant in the movie is called "Mickey's" and its most popular sandwich is called "The Big One." Like *Super Size Me*, this motion picture casts fast food restaurants in an unfavorable light. The 5-day cumulative abnormal return following the appearance of the *Wall Street Journal* article on May 17^{th} was -2.48%, whose t-statistic was -6.99. Thus, the market's utilization of information from the entertainment industry in valuation is confirmed.

Our final tests asked whether movies exploring topics other than health, particularly socially responsible business practices, might impact share prices. We conducted similar event studies surrounding the opening of two other well-known muckraking documentaries, *Roger and Me* (1989) and *Walmart: The High Cost of Low Price* (2005). The evidence in both cases was inconclusive, implying that perhaps health issues are of greater concern to customers than are business policies, particularly when the policies don't affect them directly like diet clearly does.

VI. Conclusion

The study extends to the movie theater the documented sources of information that can affect share valuation. Investors apparently perceive consumer concern with the healthiness of fast food, a concern that can translate into loss of business and an impact on the wealth of restaurant ownership. Additionally, no effect is found for movies that raise concerns regarding socially irresponsible behavior, perhaps signaling that consumers have less regard for business practices than for their own health. The study points the direction toward future research to determine the robustness of these findings across more similar events as well as the longevity of the impact of such information.

References

Adamy and Gibson, "Flak Over 'Fast Food Nation'; U.S. Food Manufacturers Rally to Oppose a Film and a Book That Blame Them for Obesity," *Wall Street Journal (Eastern Edition)*. New York, NY: May 18, 2006. p. b1.